
Section 3

Morbidity

Table 3-1. Hayfever (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	14	118,596	8.2			
	1998	15	103,577	7.9			
	1999	17	134,222	8.5			
	1997–1999			8.2	103	76	137
Farm Managers	1997	8	67,341	6.2			
	1998	7	50,950	5.2			
	1999	12	82,875	9.6			
	1997–1999			6.9	75	49	109
Forestry/Fishery Workers	1997	1	2,666	2.5			
	1998	2	12,347	9.3			
	1999	0	0	0.0			
	1997–1999			4.1	45	9	132
All Non-agricultural Workers	1997	3,270	17,855,843	9.3			
	1998	2,893	17,571,918	9.1			
	1999	2,630	17,528,032	9.0			
	1997–1999			9.1	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-2. Sinusitis (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	21	151,233	10.4			
	1998	14	124,020	9.4			
	1999	17	116,580	7.4			
	1997–1999			9.0	<i>77</i>	59	101
Farm Managers	1997	16	116,148	10.9			
	1998	10	76,391	7.7			
	1999	9	81,861	9.5			
	1997–1999			9.4	69	48	96
Forestry/Fishery Workers	1997	2	9,338	8.7			
	1998	2	13,714	10.3			
	1999	1	9,114	7.1			
	1997–1999			8.7	68	22	159
All Non-agricultural Workers	1997	5,859	31,367,704	16.4			
	1998	5,185	31,438,933	16.3			
	1999	4,688	30,496,524	15.6			
	1997–1999			16.0	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-3. Chronic bronchitis (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	6	39,014	2.7			
	1998	8	69,040	5.2			
	1999	7	40,345	2.6			
	1997–1999			3.4	108	67	165
Farm Managers	1997	4	26,239	2.5			
	1998	1	6,507	0.7			
	1999	3	20,890	2.4			
	1997–1999			1.8	52	22	102
Forestry/Fishery Workers	1997	0	0	0.0			
	1998	1	9,448	7.1			
	1999	1	9,114	7.1			
	1997–1999			5.0	<i>143</i>	17	516
All Non-agricultural Workers	1997	1,857	9,593,307	5.0			
	1998	1,554	8,863,177	4.6			
	1999	1,409	8,751,682	4.5			
	1997–1999			4.7	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-4. Emphysema (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	0	0	0.0			
	1998	3	20,760	1.6			
	1999	1	1,969	0.1			
	1997–1999			0.5	<i>71</i>	19	182
Farm Managers	1997	1	10,486	1.0			
	1998	0	0	0.0			
	1999	0	0	0.0			
	1997–1999			0.4	<i>20</i>	1	111
Forestry/Fishery Workers	1997	0	0	0.0			
	1998	0	0	0.0			
	1999	0	0	0.0			
	1997–1999			0.0	<i>0</i>	---	---
All Non-agricultural Workers	1997	612	3,205,415	1.7			
	1998	542	2,934,923	1.5			
	1999	460	2,783,974	1.4			
	1997–1999			1.5	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “Have you EVER been told by a doctor or other health professional that you had emphysema?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-5. Asthma (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	17	114,894	7.9			
	1998	16	132,838	10.1			
	1999	16	142,603	9.1			
	1997–1999			9.0	109	81	144
Farm Managers	1997	5	29,316	2.7			
	1998	9	63,150	6.3			
	1999	7	59,530	6.9			
	1997–1999			5.2	68	42	104
Forestry/Fishery Workers	1997	0	0	0.0			
	1998	3	15,828	11.9			
	1999	1	10,946	8.5			
	1997–1999			7.2	89	24	228
All Non-agricultural Workers	1997	3,232	17,442,022	9.1			
	1998	2,925	17,457,507	9.0			
	1999	2,631	16,660,804	8.5			
	1997–1999			8.9	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “Have you EVER been told by a doctor or other health professional that you had asthma?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-6. Lung cancer (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group and survey year, U.S. residents age 18 and over, 1997–1999

Worker Group	Survey Year	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
			n	(%)		LCL	UCL
Farm Workers	1997	0	0	0.0			
	1998	0	0	0.0			
	1999	0	0	0.0			
	1997–1999			0.0	<i>0</i>	---	---
Farm Managers	1997	0	0	0.0			
	1998	0	0	0.0			
	1999	1	13,927	1.6			
	1997–1999			0.5	223	6	1,239
Forestry/Fishery Workers	1997	0	0	0.0			
	1998	0	0	0.0			
	1999	0	0	0.0			
	1997–1999			0.0	<i>0</i>	---	---
All Non-agricultural Workers	1997	78	388,060	0.2			
	1998	54	339,485	0.2			
	1999	70	439,496	0.2			
	1997–1999			0.2	100		

n - estimated number

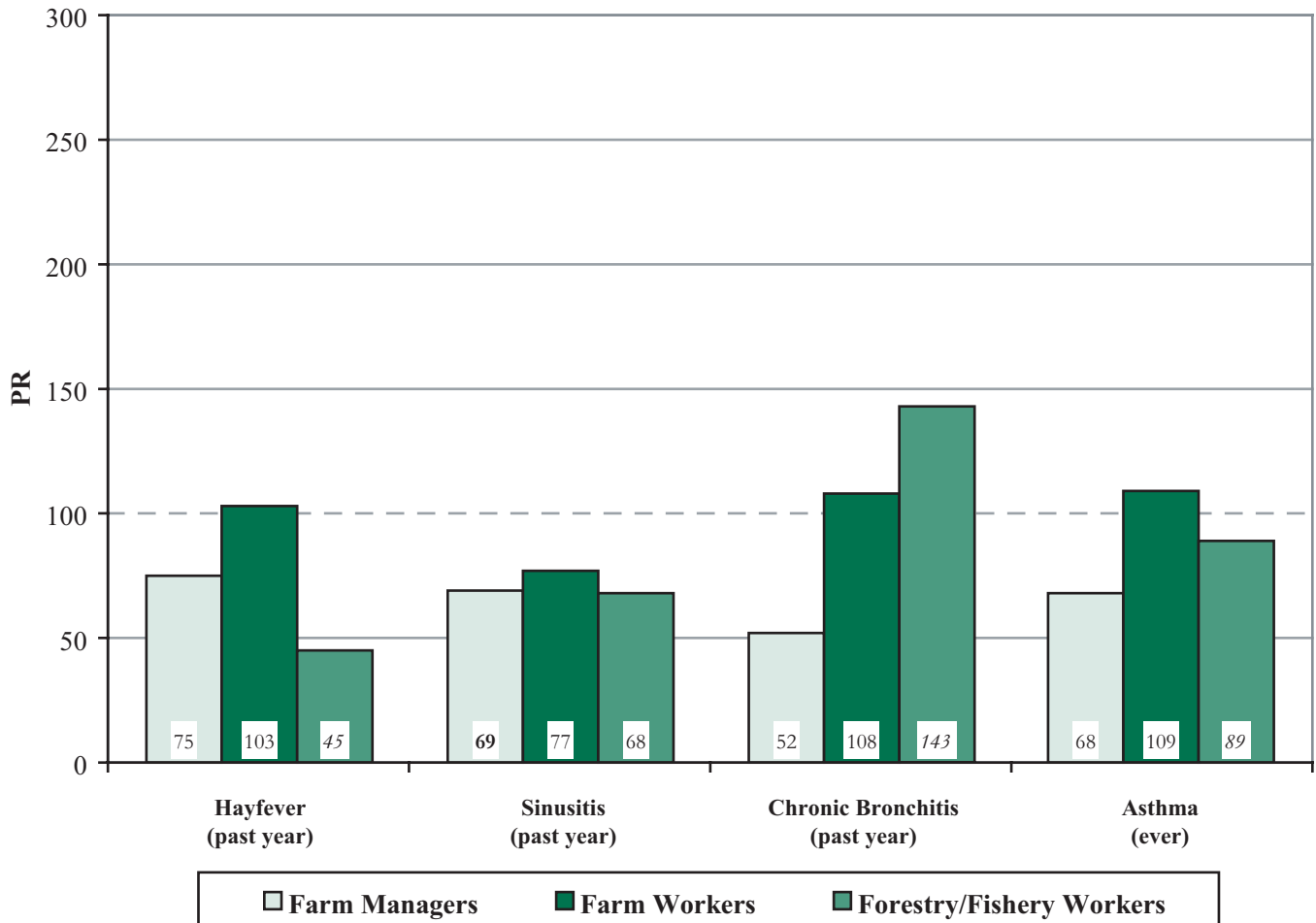
LCL - lower confidence limit

UCL - upper confidence limit

NOTE: Based on responses to the question "Have you EVER been told by a doctor or other health professional that you had cancer or a malignancy of any kind? What kind of cancer was it? ... lung?" Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-1. Respiratory conditions: Prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

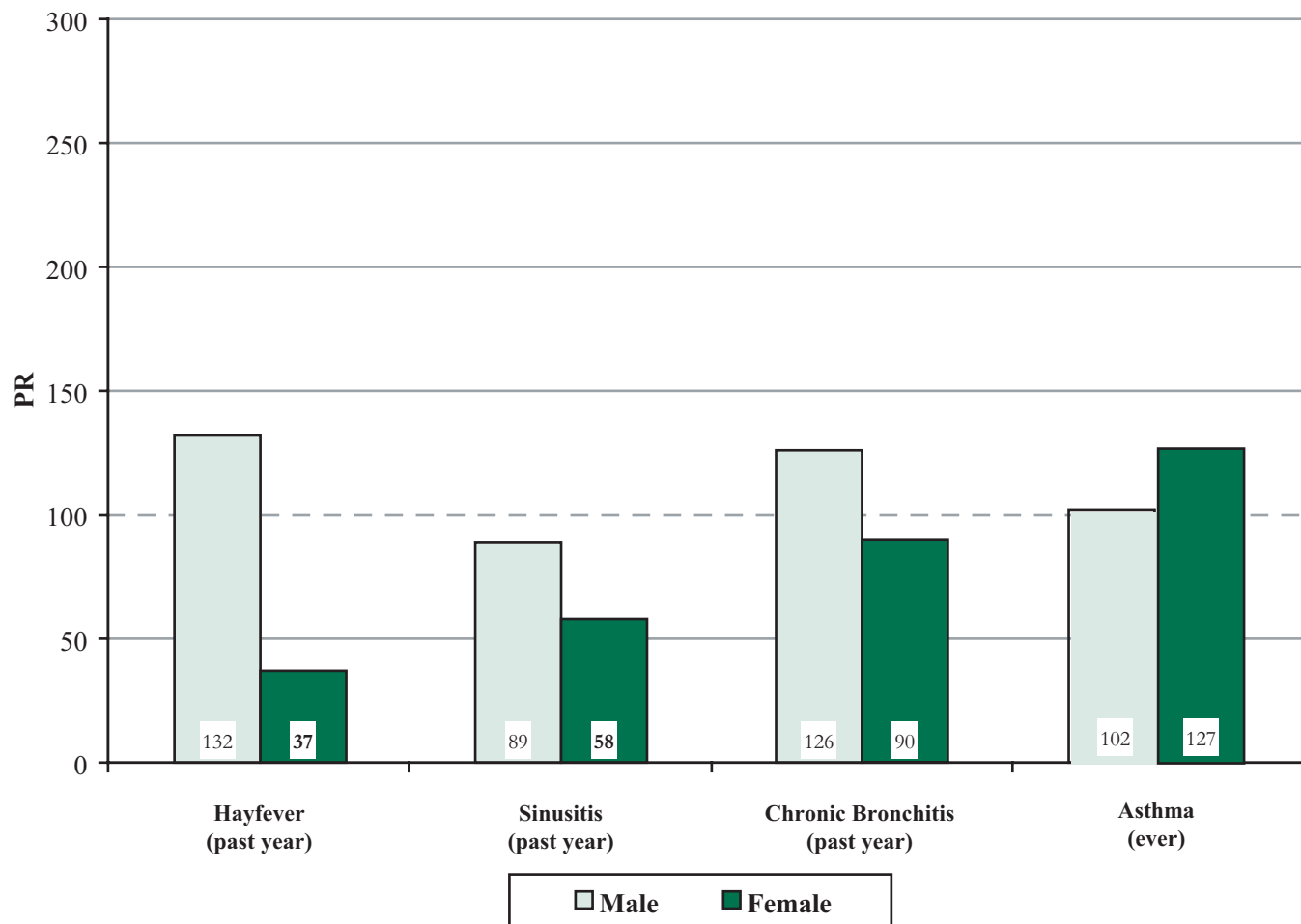
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-2. Farm workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by respiratory condition and sex, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

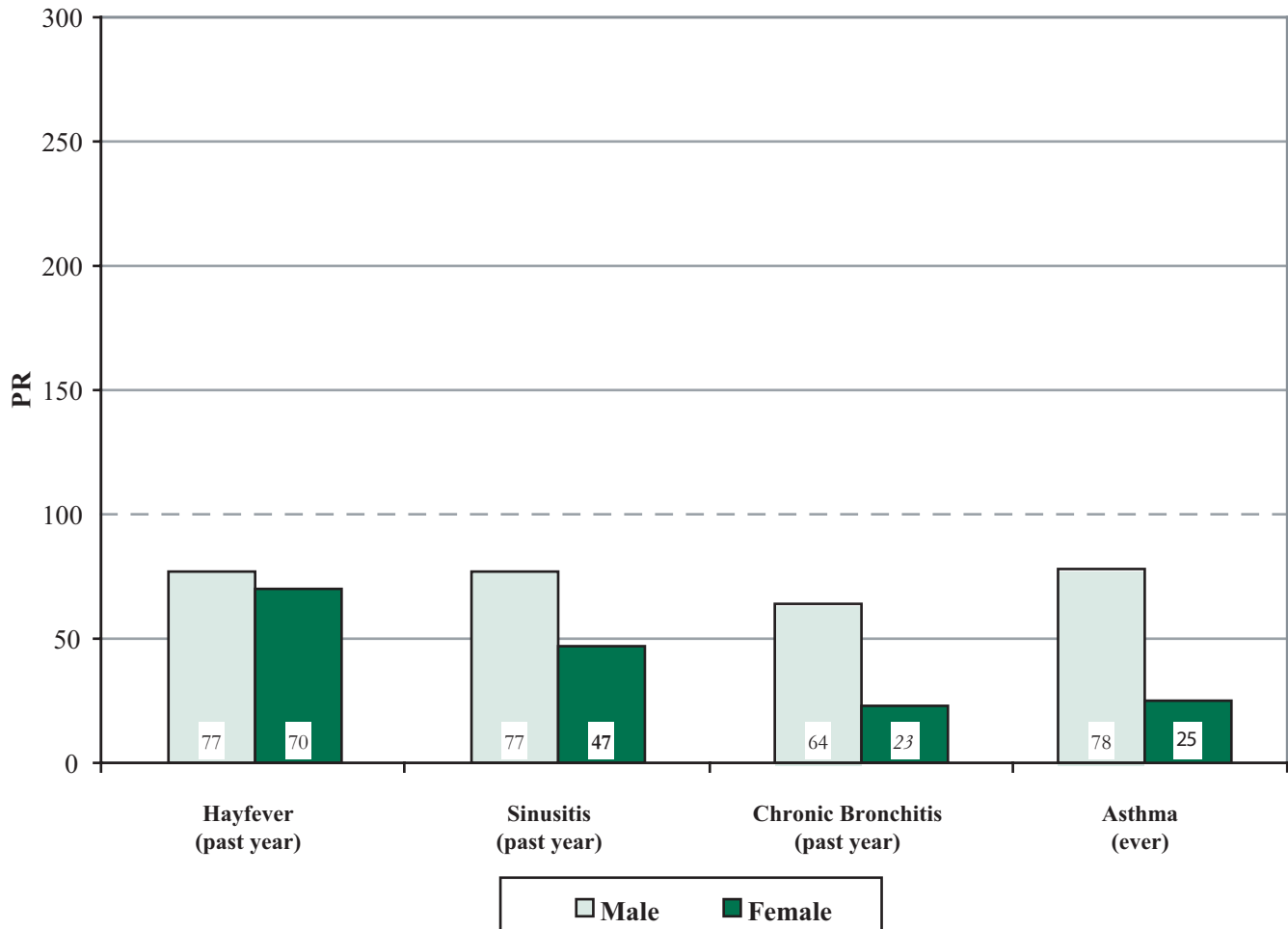
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-3. Farm managers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by respiratory condition and sex, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

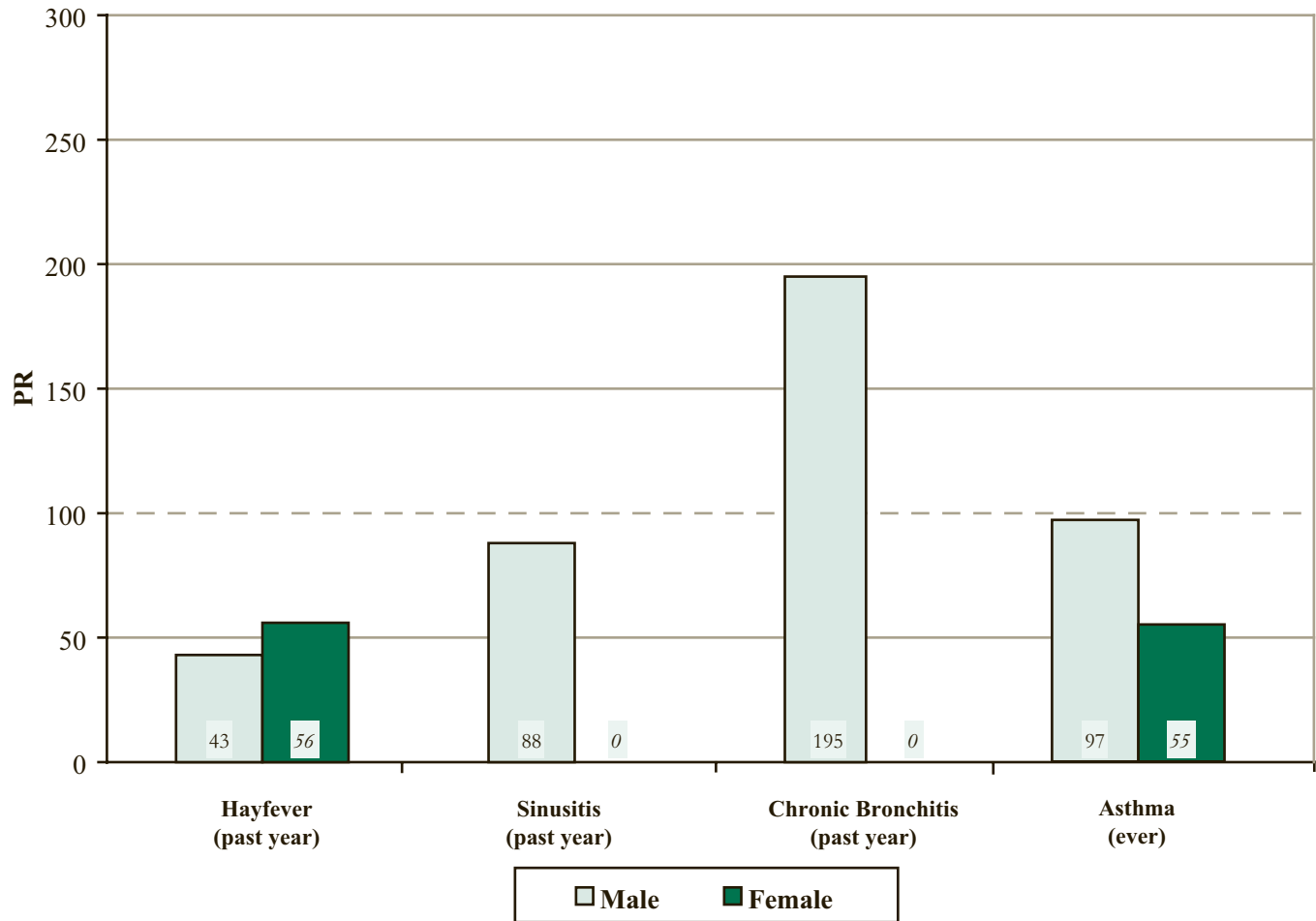
“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Morbidity by Respiratory Condition and Sex within Agricultural Group—NHIS

Figure 3-4. Forestry/fishery workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by respiratory condition and sex, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

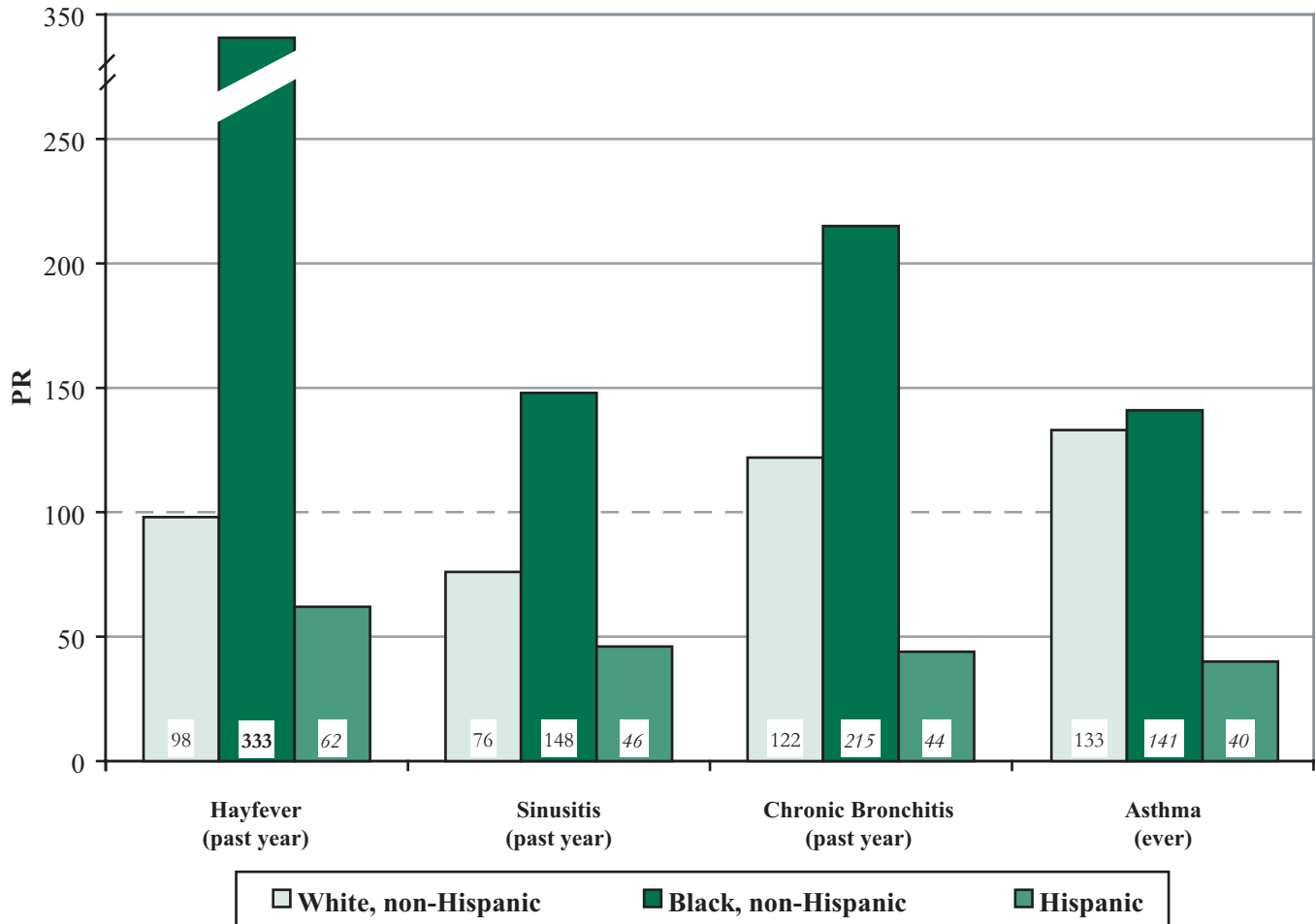
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-5. Farm workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by respiratory condition and race/ethnicity, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

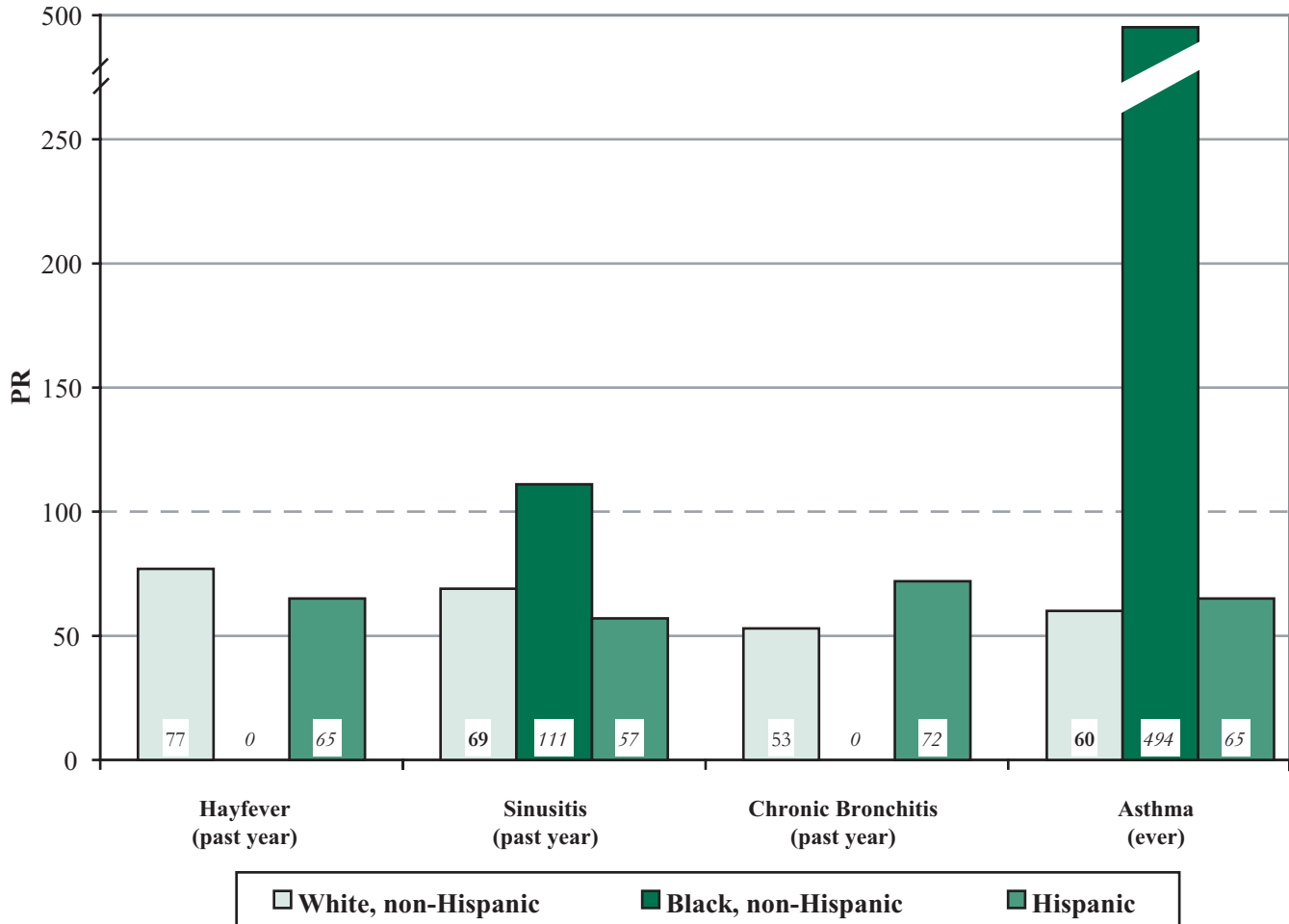
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-6. Farm managers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by respiratory condition and race/ethnicity, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

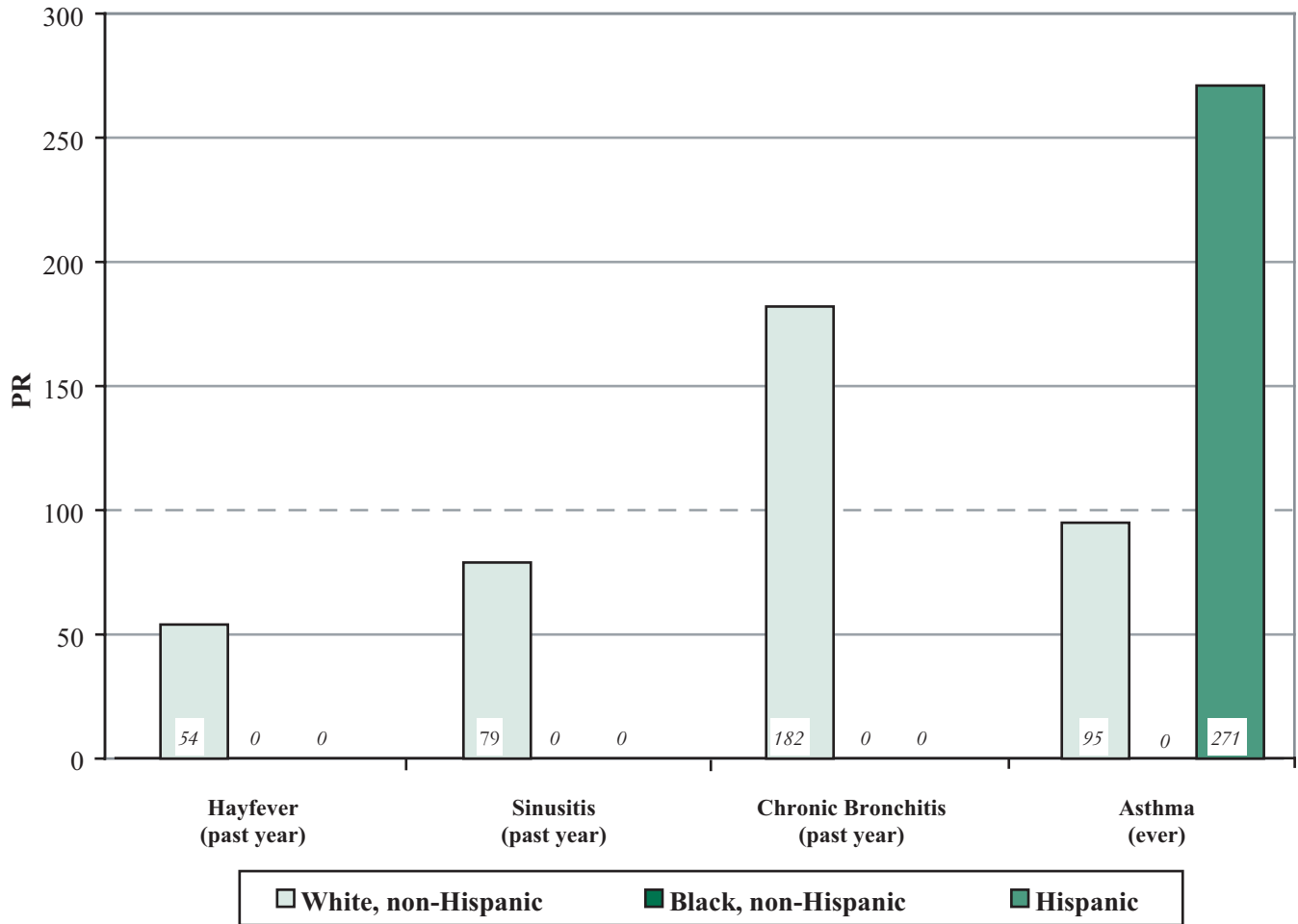
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-7. Forestry/fishery workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by respiratory condition and race/ethnicity, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

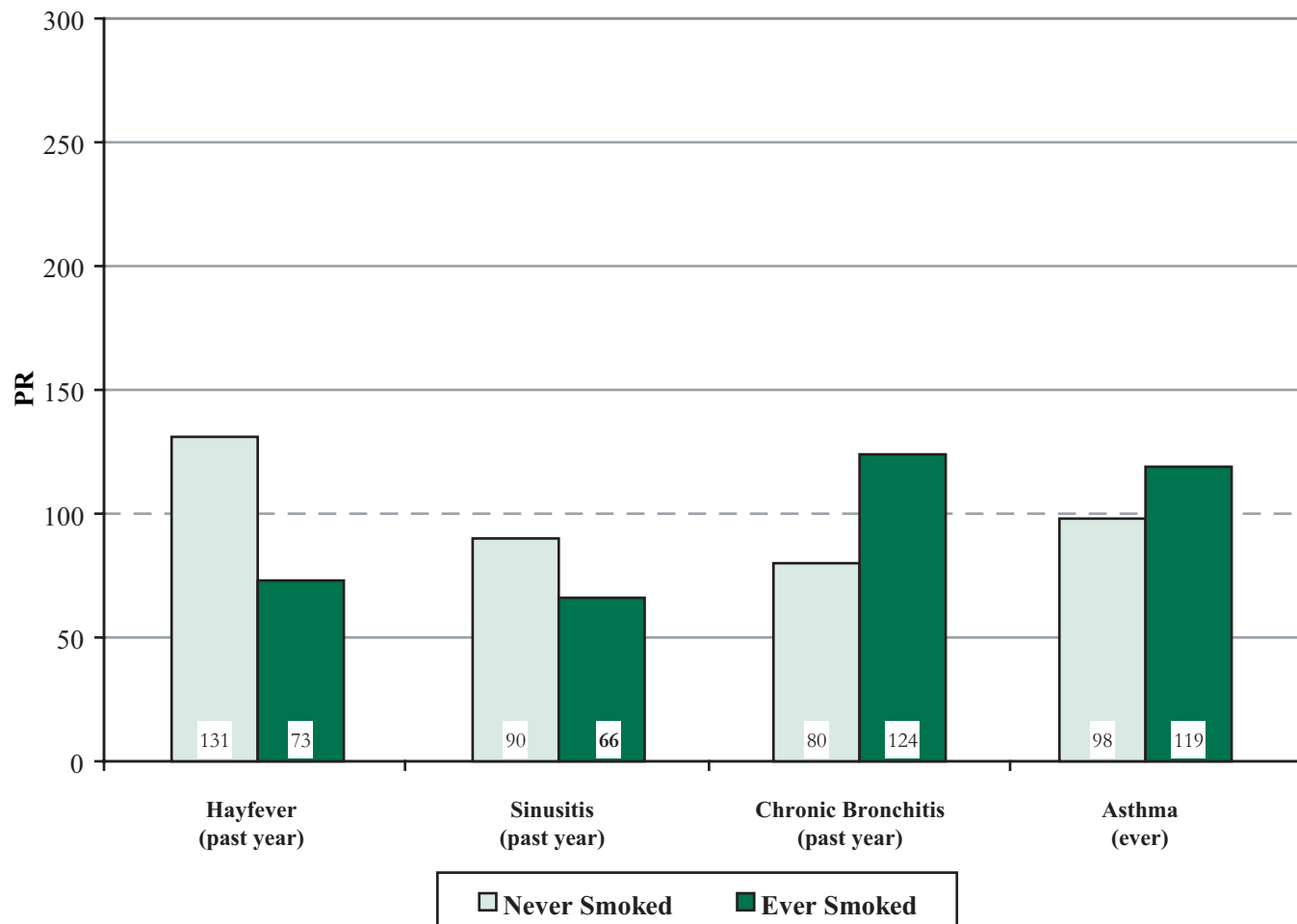
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-8. Farm workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by respiratory condition and smoking status, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

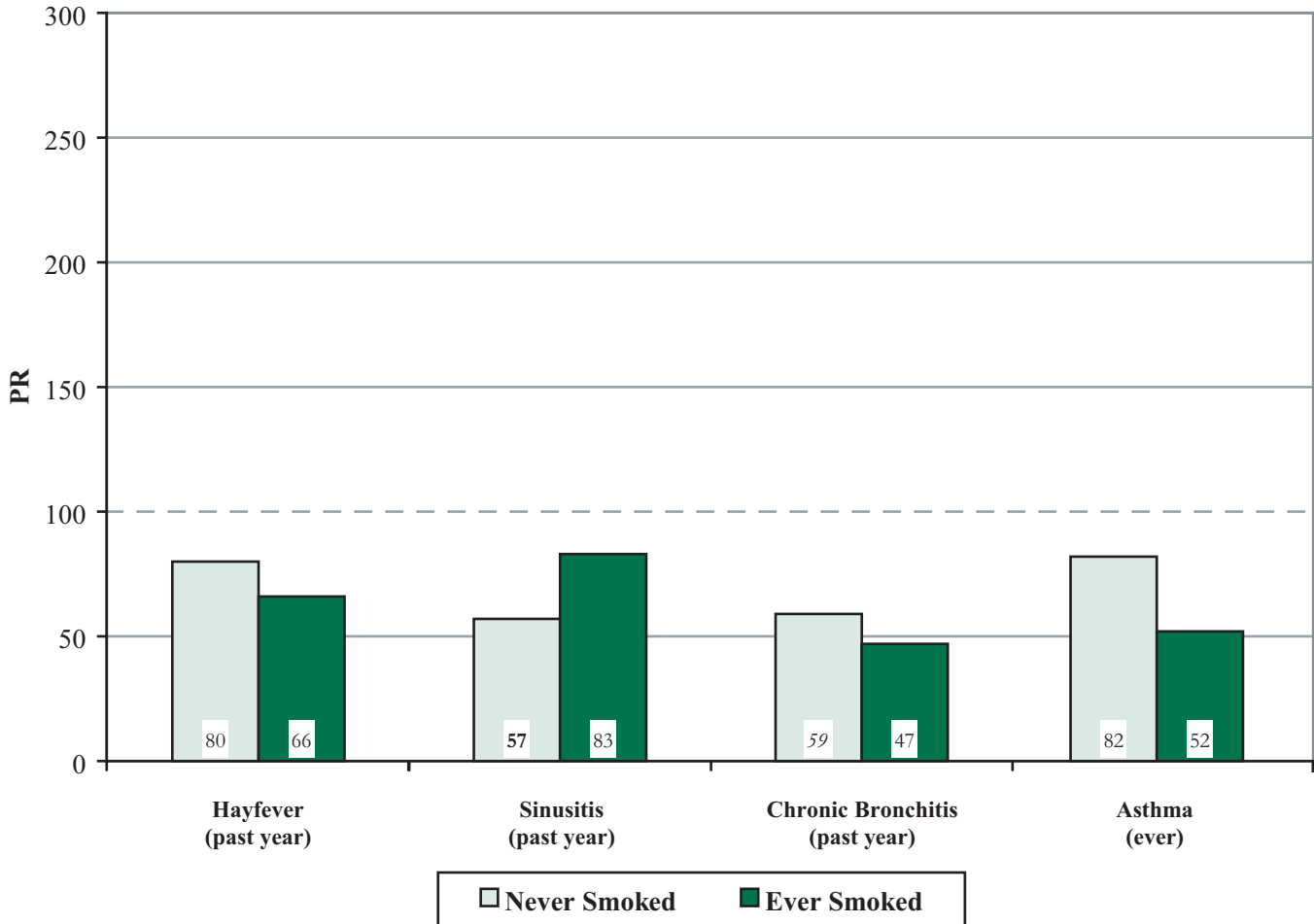
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-9. Farm managers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by respiratory condition and smoking status, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

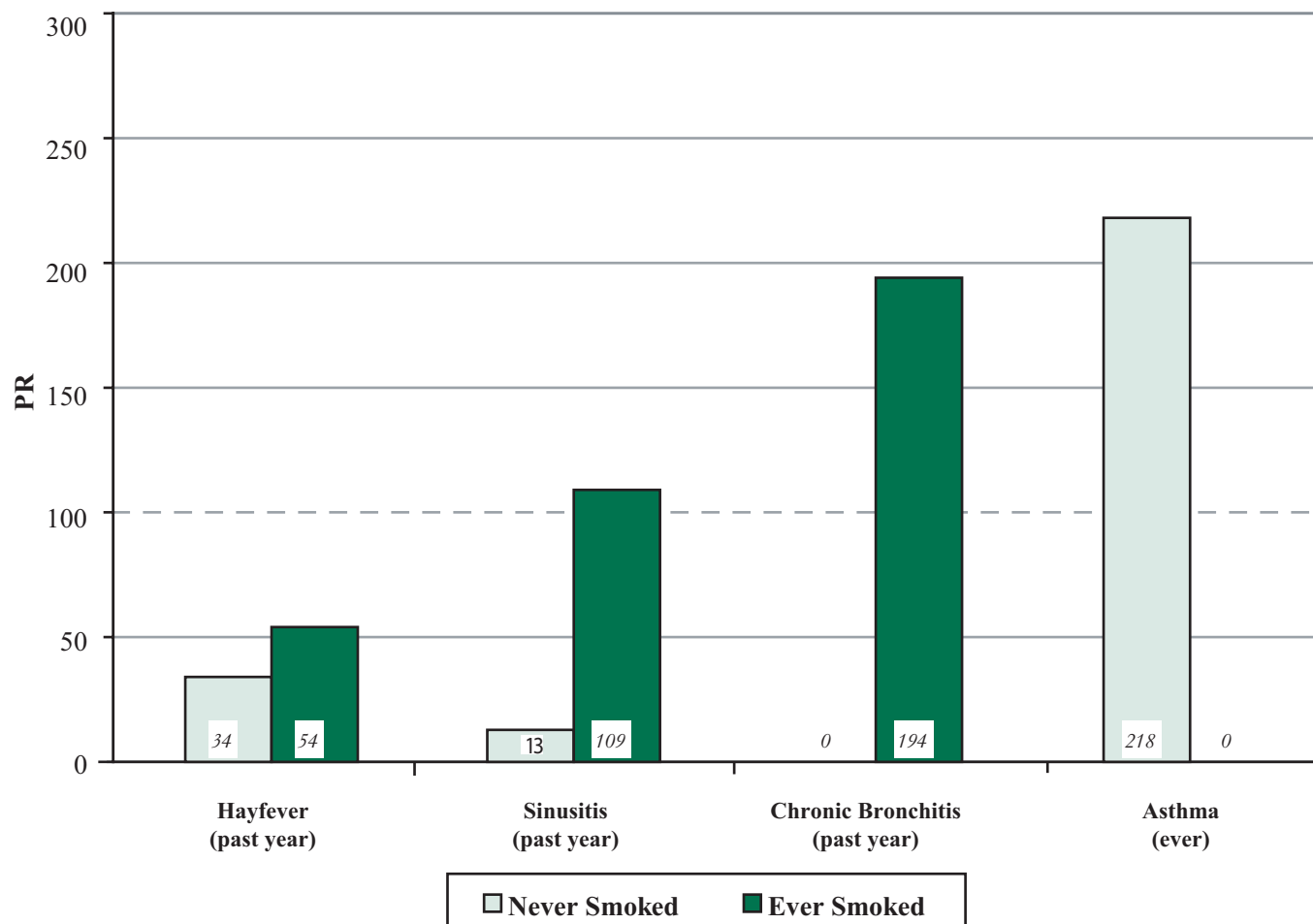
“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Figure 3-10. Forestry/fishery workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by respiratory condition and smoking status, U.S. residents age 18 and over, 1997–1999



NOTE: Based on responses to the following questions:

“During the past 12 months, have you been told by a doctor or other health professional that you had hayfever?”

“During the past 12 months, have you been told by a doctor or other health professional that you had sinusitis?”

“During the past 12 months, have you been told by a doctor or other health professional that you had chronic bronchitis?”

“Have you EVER been told by a doctor or other health professional that you had asthma?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, National Health Interview Survey

Table 3-7. Wheezing, apart from a cold (current): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	95	436,107	12.0	111	90	136
Farm Managers	53	370,558	14.1	115	88	151
Other Agricultural Workers	19	138,713	10.7	100	60	156
All Non-agricultural Workers	1,905	21,380,987	12.0	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “Apart from when you have a cold, does your chest ever sound wheezy or whistling?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-8. Cough (current): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	56	330,763	9.1	108	82	140
Farm Managers	48	231,149	8.8	90	67	119
Other Agricultural Workers	15	84,140	6.5	74	41	122
All Non-agricultural Workers	1,493	16,332,052	9.2	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “Do you usually cough on most days for 3 consecutive months or more during the year?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-9. Phlegm (current): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	75	425,288	11.7	133	106	167
Farm Managers	58	266,299	10.1	94	72	122
Other Agricultural Workers	17	101,183	7.8	86	50	138
All Non-agricultural Workers	1,554	15,218,500	8.5	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-10. Shortness of breath (current): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	218	915,335	25.2	110	97	126
Farm Managers	125	615,034	23.5	94	79	112
Other Agricultural Workers	41	249,033	19.2	101	74	137
All Non-agricultural Workers	4,642	41,389,383	23.3	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question "Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?"

Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-11. Stuffy, itchy, runny nose (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	273	1,563,707	43.1	87	77	98
Farm Managers	176	1,284,201	48.9	97	77	122
Other Agricultural Workers	66	401,689	31.0	59	46	75
All Non-agricultural Workers	8,726	98,356,204	55.3	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-12. Cold or flu (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	502	2,373,949	65.4	96	88	105
Farm Managers	203	1,767,314	67.2	108	95	124
Other Agricultural Workers	117	770,838	59.4	83	69	100
All Non-agricultural Workers	12,029	123,171,528	69.2	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “During the past 12 months, have you had a cold or the flu?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-13. Sinusitis (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	142	851,416	23.5	80	68	94
Farm Managers	95	792,658	30.5	97	79	119
Other Agricultural Workers	36	264,361	20.4	69	49	96
All Non-agricultural Workers	5,572	64,524,553	36.3	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “During the past 12 months, have you had sinusitis or sinus problems?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-14. Pneumonia (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	17	52,159	1.4	78	45	125
Farm Managers	12	68,095	2.6	136	70	237
Other Agricultural Workers	6	14,449	1.1	78	29	170
All Non-agricultural Workers	374	3,851,288	2.2	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question "During the past 12 months, have you had pneumonia?" Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-15. Wheezing (past year): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	120	553,404	15.2	97	80	116
Farm Managers	61	419,760	16.0	98	77	126
Other Agricultural Workers	22	166,787	12.8	77	48	117
All Non-agricultural Workers	2,737	31,130,384	17.5	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “Have you had wheezing or whistling in your chest at any time in the past 12 months?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-16. Asthma (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	53	224,856	6.2	92	70	120
Farm Managers	21	118,254	4.5	63	39	96
Other Agricultural Workers	13	139,067	10.7	164	87	280
All Non-agricultural Workers	1,289	14,103,066	7.9	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “Has a doctor ever told you that you had asthma?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-17. Chronic bronchitis (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	43	170,254	4.7	97	71	131
Farm Managers	20	113,407	4.3	75	46	116
Other Agricultural Workers	8	67,224	5.2	120	52	236
All Non-agricultural Workers	1,062	11,141,371	6.3	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “Has a doctor ever told you that you had chronic bronchitis?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-18. Emphysema (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	20	104,616	2.9	134	82	207
Farm Managers	28	112,971	4.3	124	83	179
Other Agricultural Workers	5	27,826	2.1	<i>128</i>	41	299
All Non-agricultural Workers	375	3,401,032	1.9	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Based on responses to the question “Has a doctor ever told you that you had emphysema?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

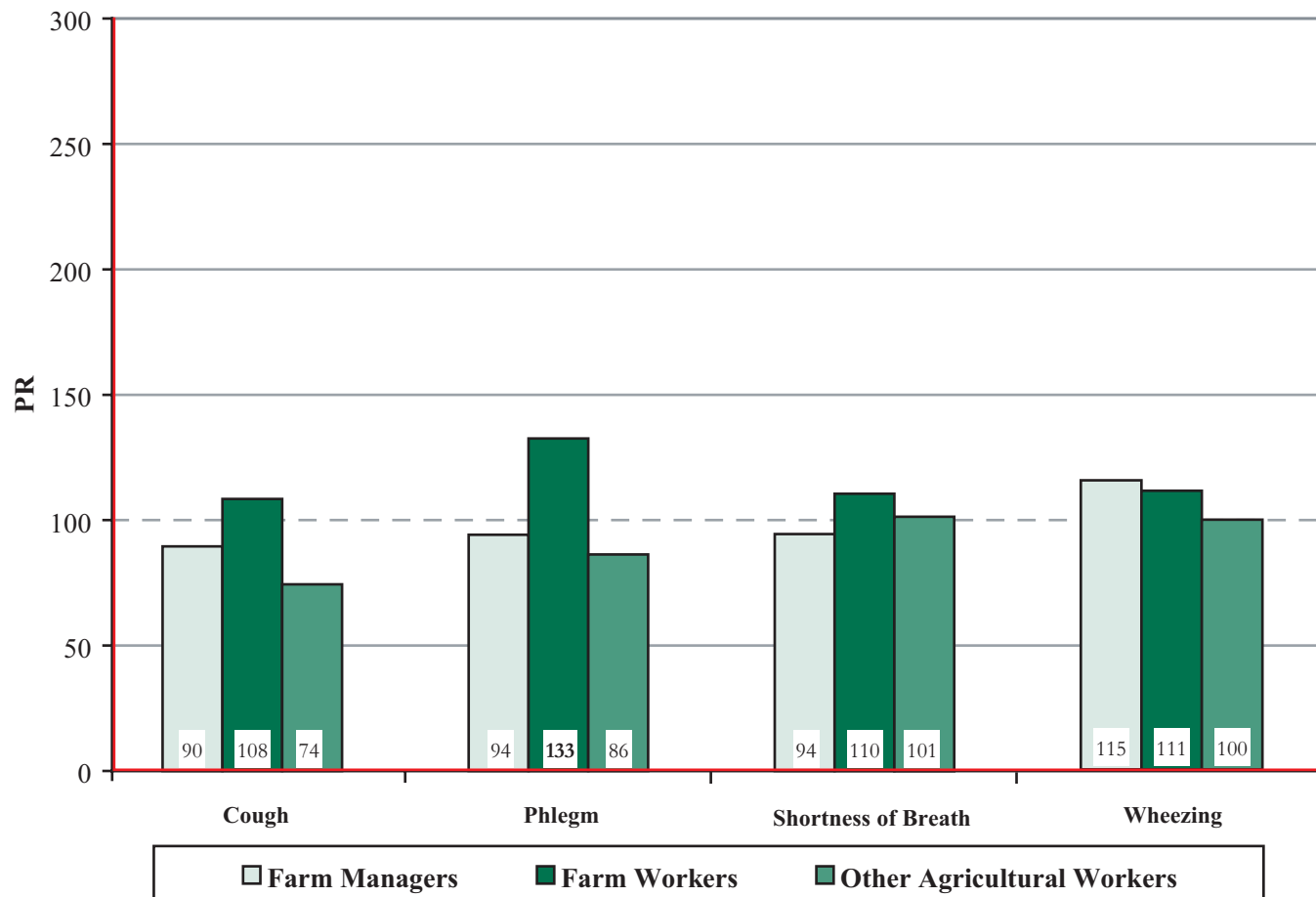
Table 3-19. Hayfever (ever): Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	30	316,422	8.7	92	62	131
Farm Managers	26	147,088	5.6	49	32	72
Other Agricultural Workers	6	32,288	2.5	26	10	57
All Non-agricultural Workers	1,710	21,672,453	12.2	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit
 NOTE: Based on responses to the question “Has a doctor ever told you that you had hay fever?” Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 (p<0.05). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.
 SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Agricultural Group within Respiratory Condition—NHANES III

Figure 3-11. Respiratory conditions (current): Prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

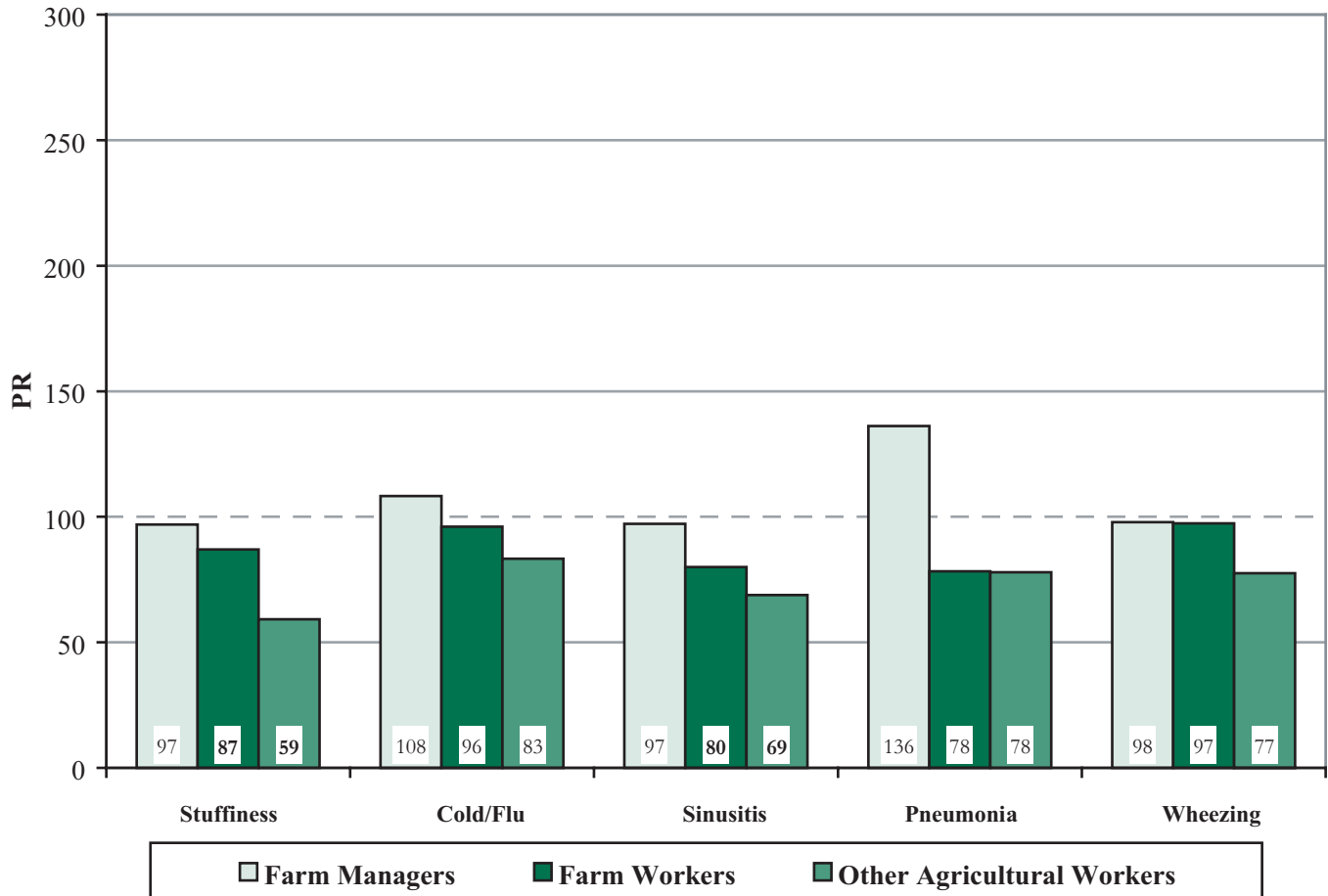
“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-12. Respiratory conditions (past year): Prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Agricultural Group within Respiratory Condition—NHANES III

Figure 3-13. Respiratory conditions (ever): Prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994



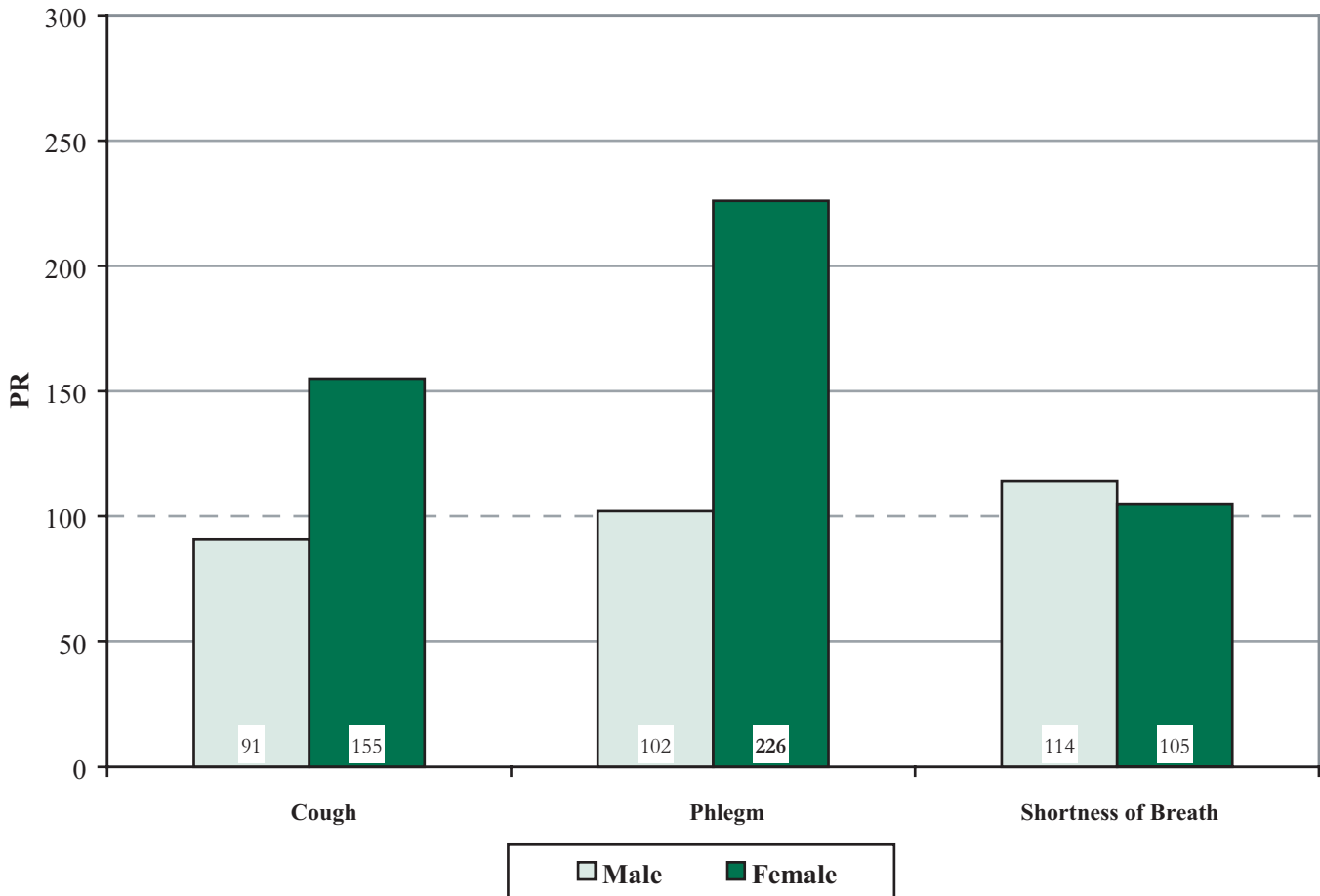
NOTE: Based on responses to the following questions:

- “Has a doctor ever told you that you had asthma?”
- “Has a doctor ever told you that you had chronic bronchitis?”
- “Has a doctor ever told you that you had emphysema?”
- “Has a doctor ever told you that you had hay fever?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-14. Respiratory conditions (current), farm workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

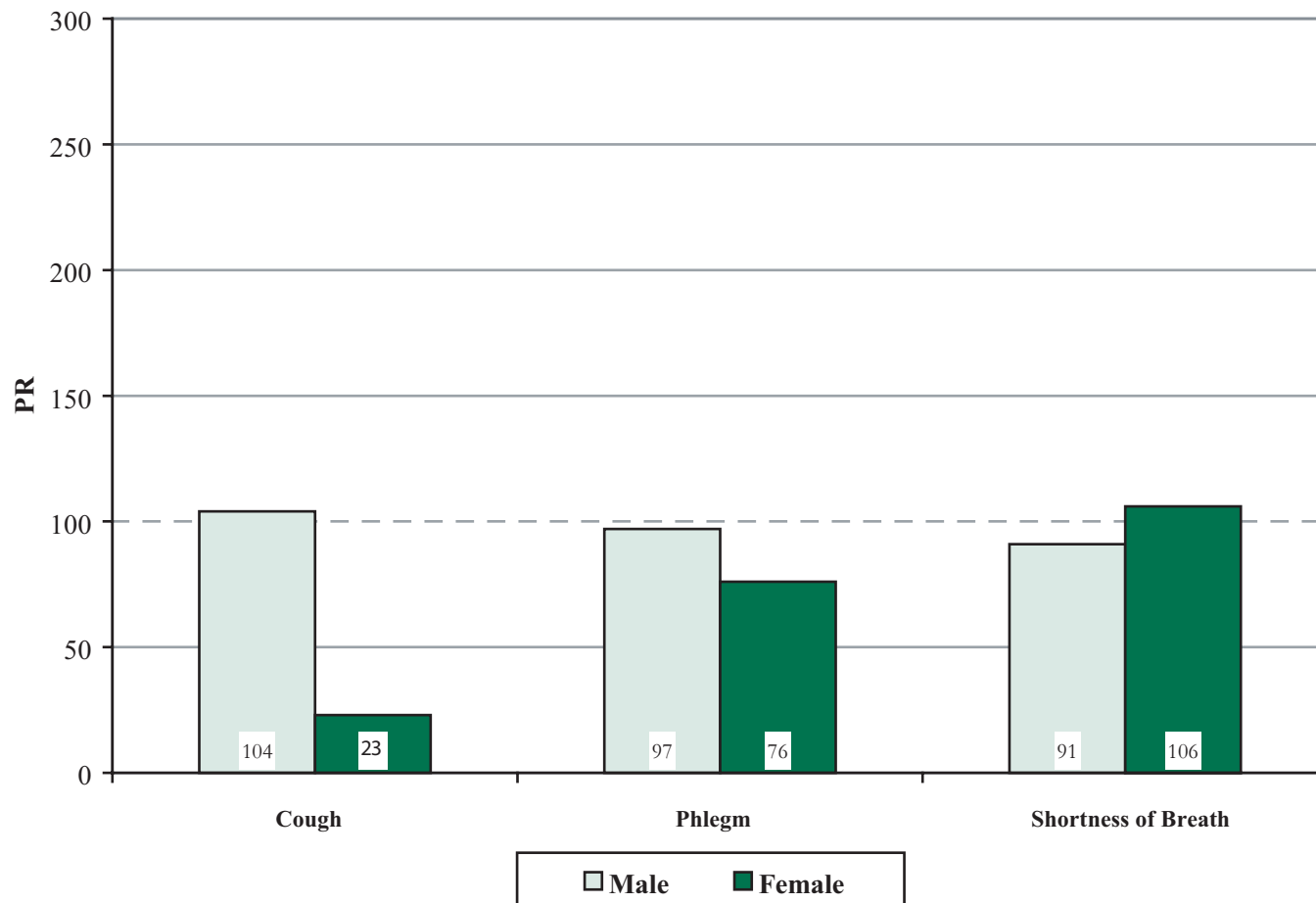
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-15. Respiratory conditions (current), farm managers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

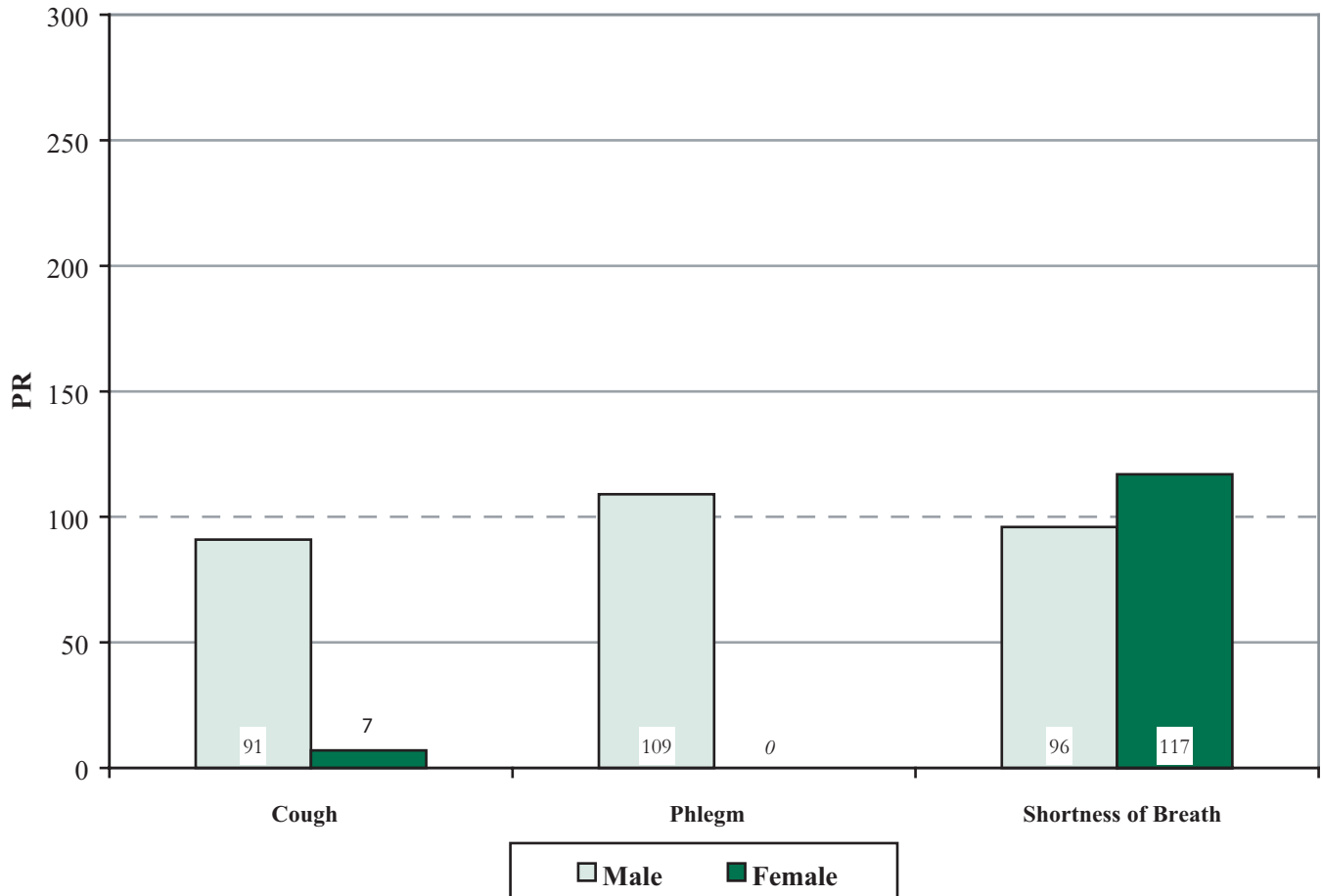
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-16. Respiratory conditions (current), other agricultural workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

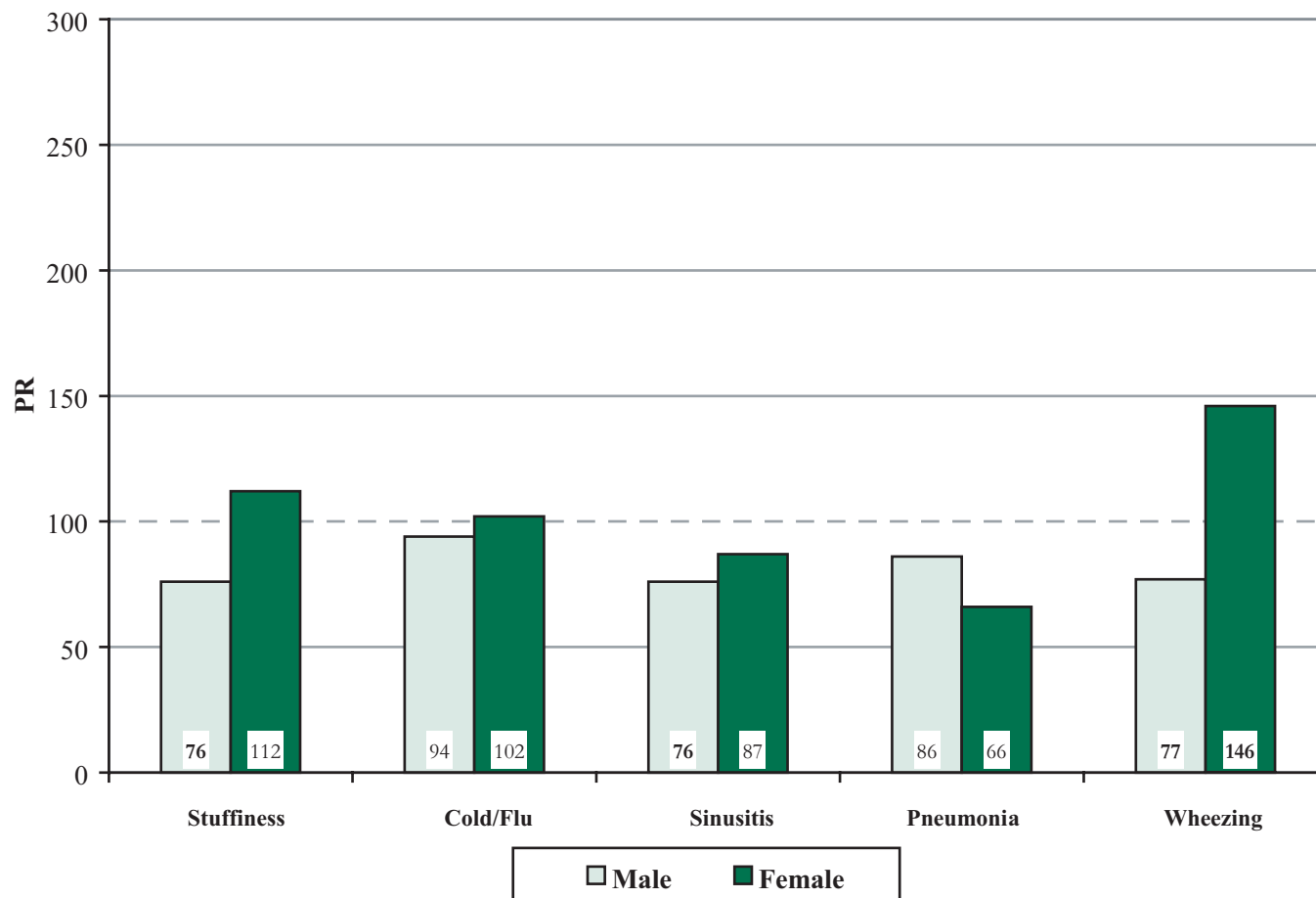
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-17. Respiratory conditions (past year), farm workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

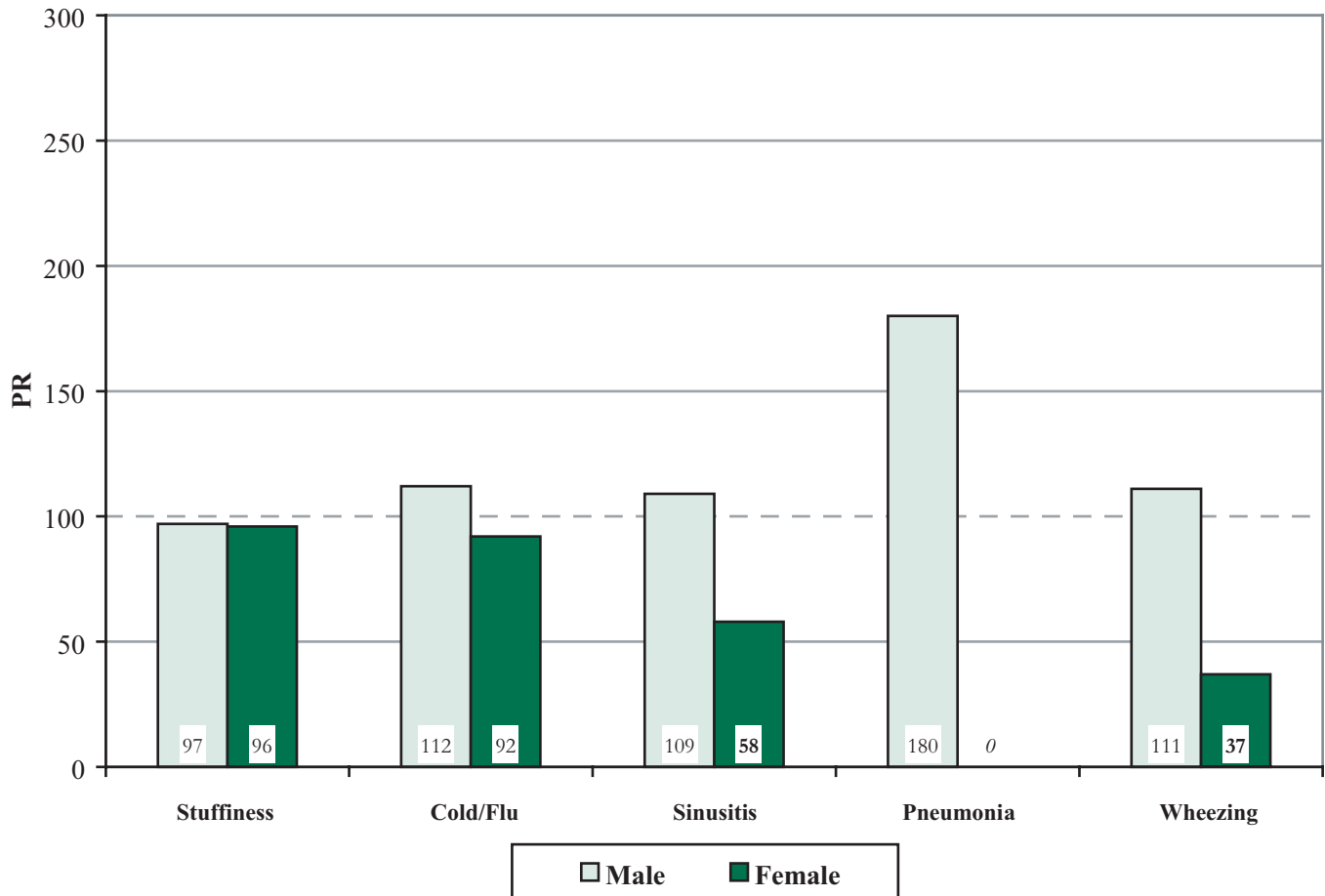
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-18. Respiratory conditions (past year), farm managers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

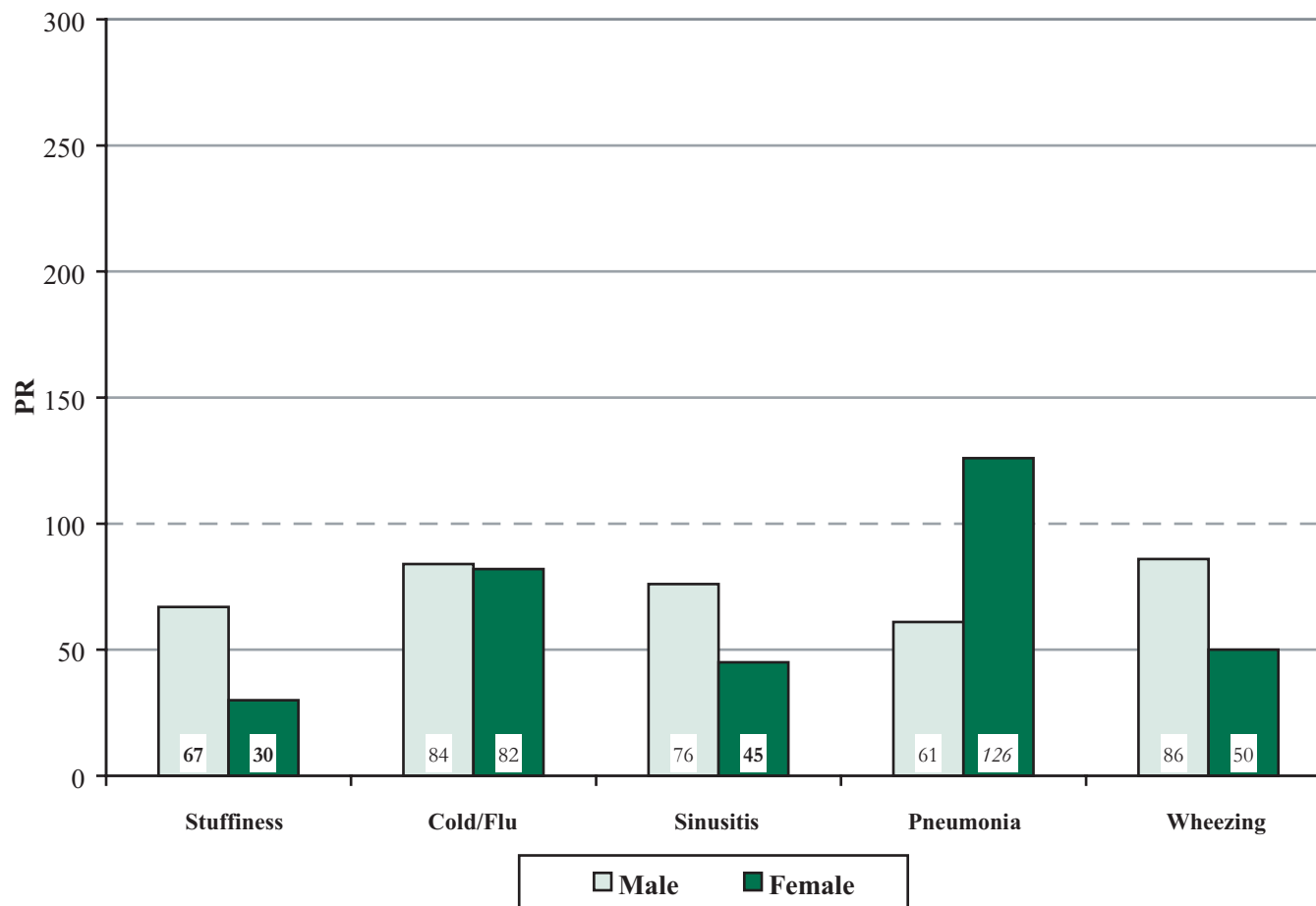
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-19. Respiratory conditions (past year), other agricultural workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

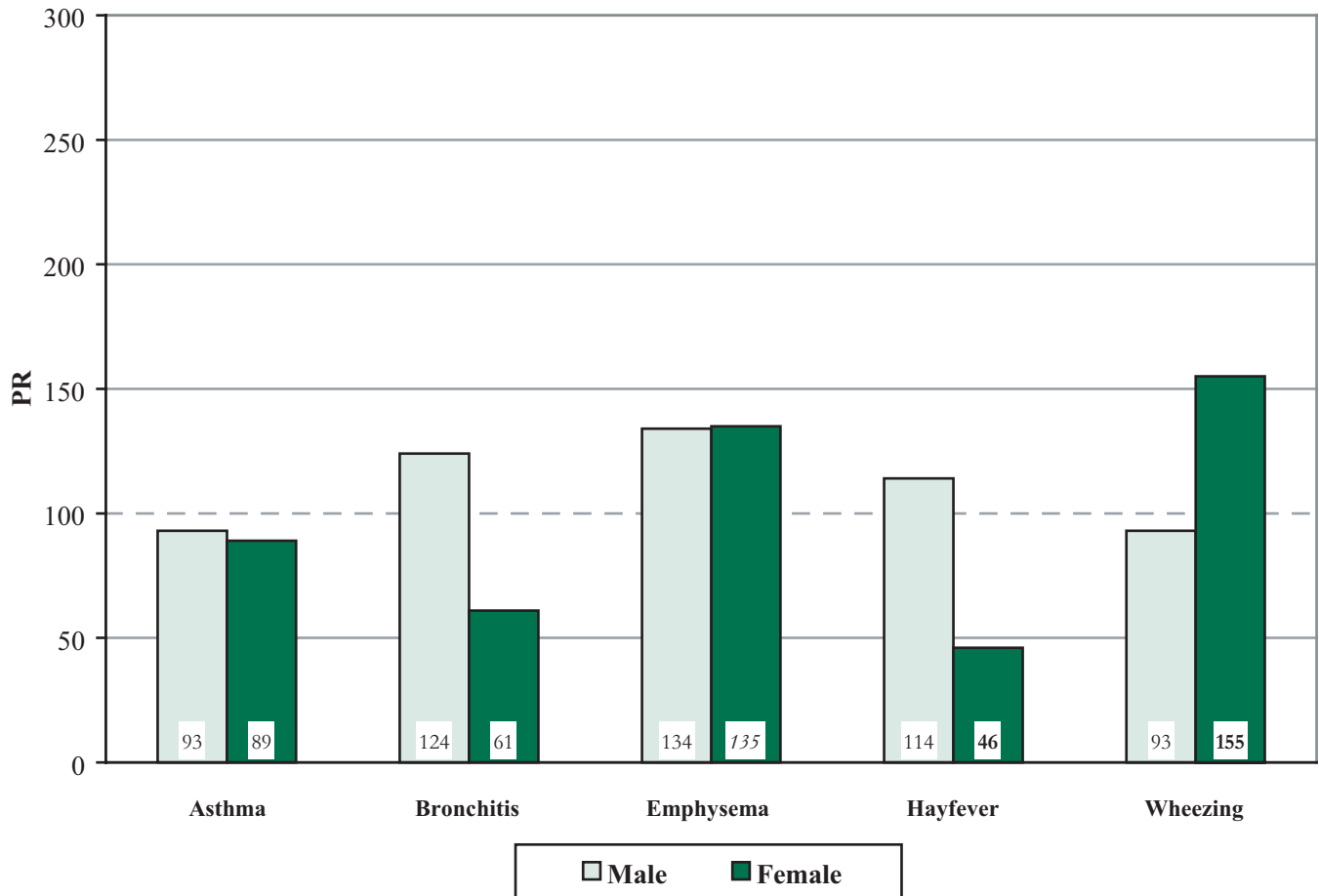
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-20. Respiratory conditions (ever), farm workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

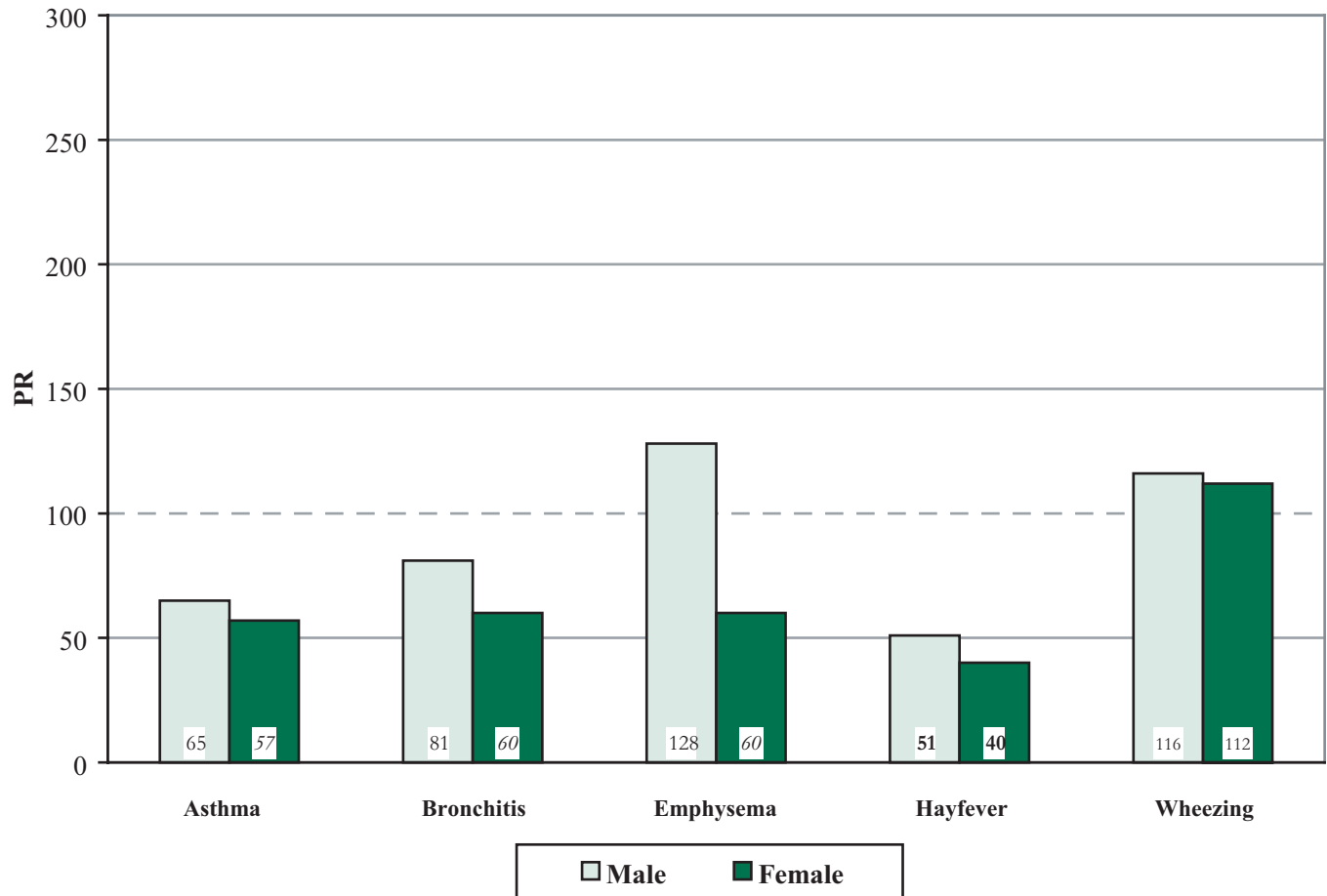
“Has a doctor ever told you that you had hay fever?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-21. Respiratory conditions (ever), farm managers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

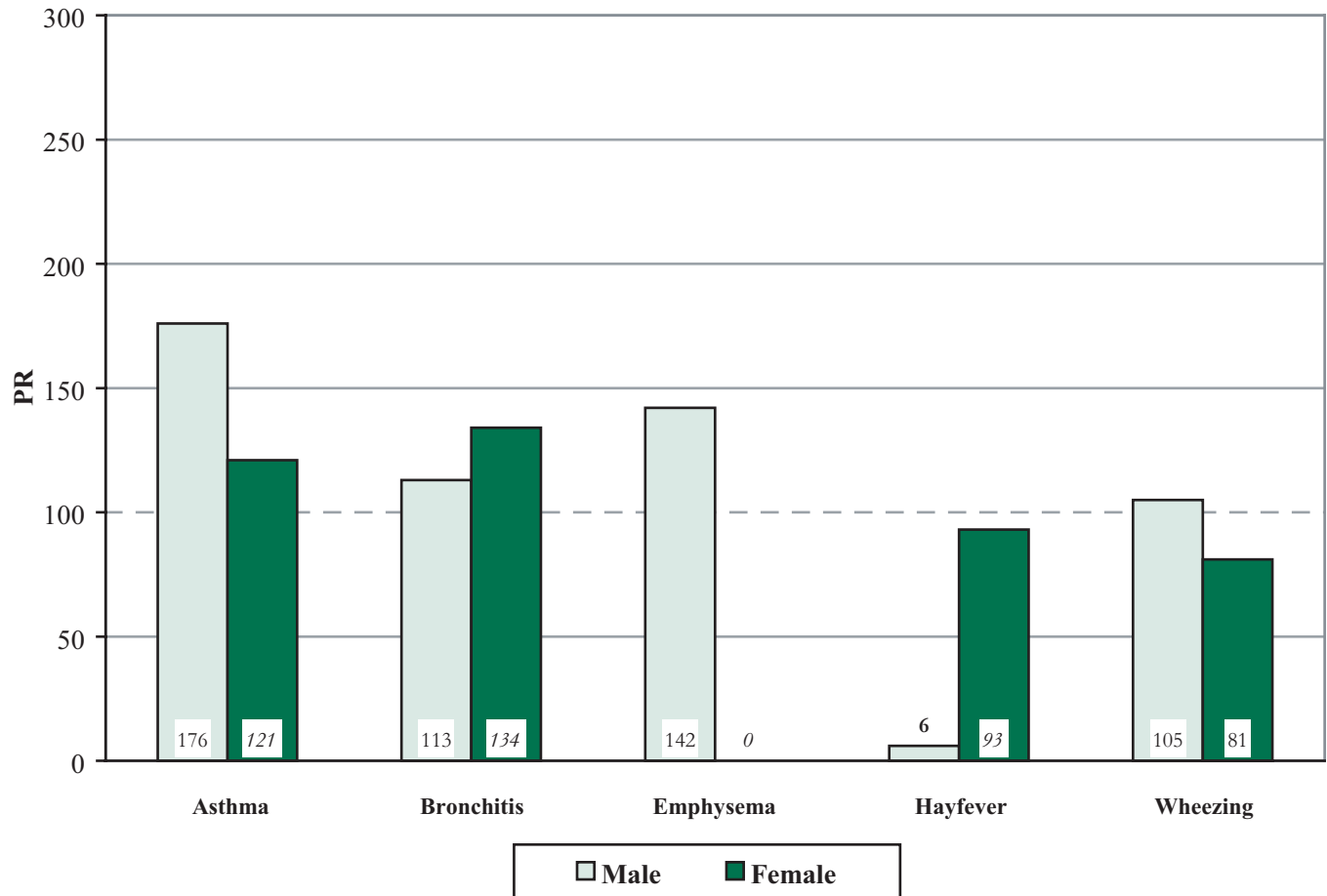
“Has a doctor ever told you that you had hay fever?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-22. Respiratory conditions (ever), other agricultural workers: Prevalence ratio (PR) adjusted for age, race/ethnicity, and smoking status by sex, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

“Has a doctor ever told you that you had hay fever?”

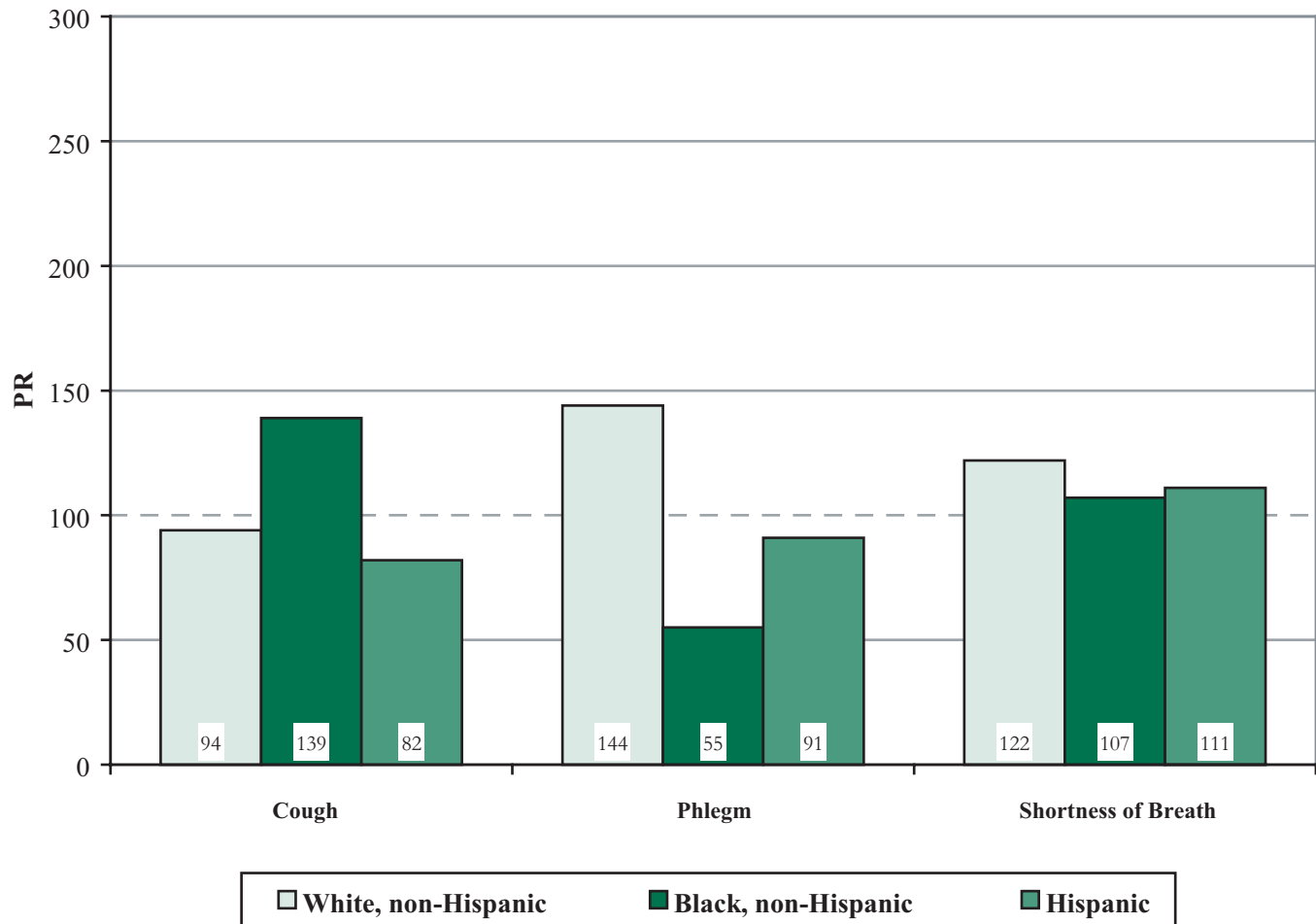
“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Race/Ethnicity within Respiratory Condition and Agricultural Group—NHANES III

Figure 3-23. Respiratory conditions (current), farm workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

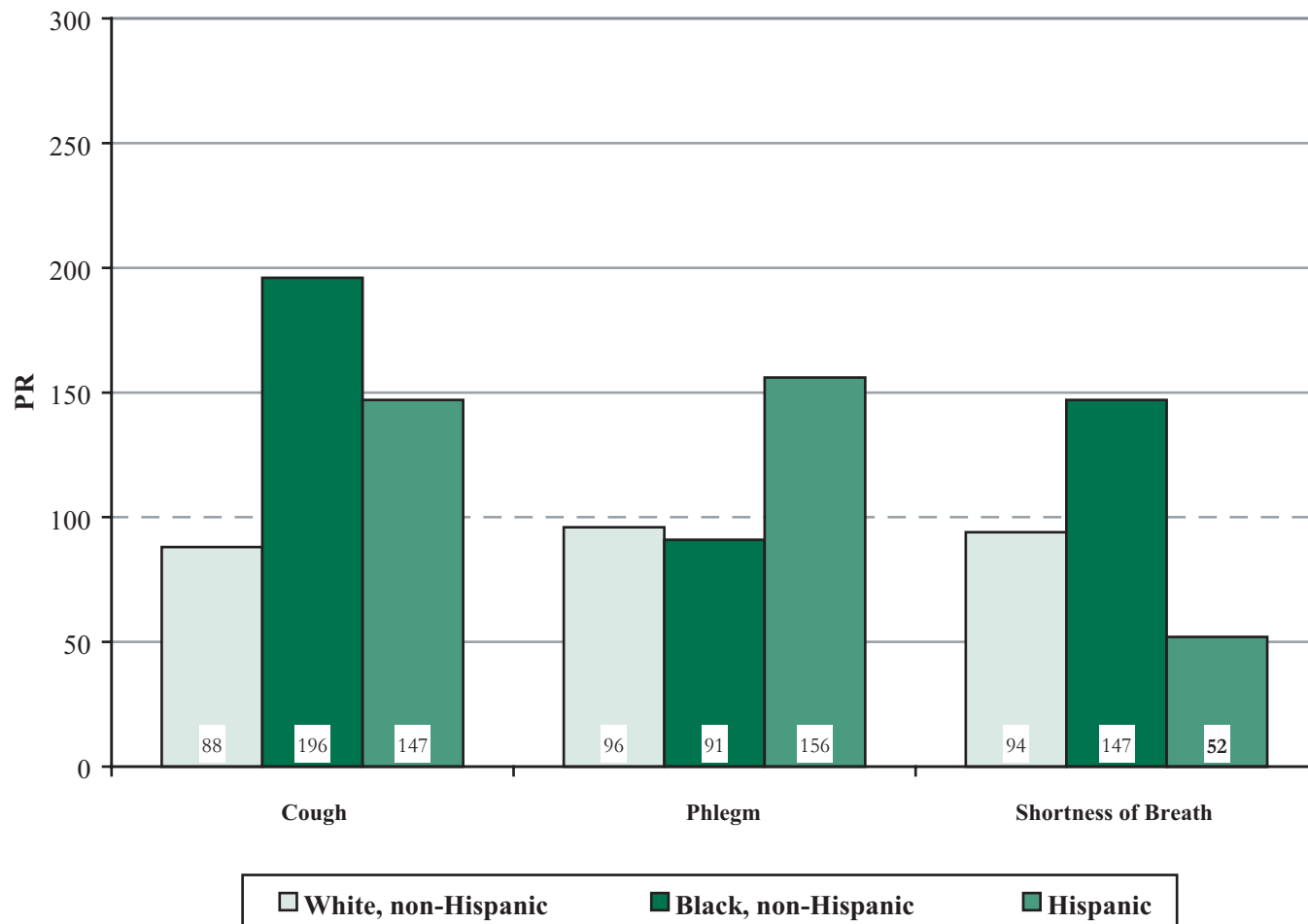
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-24. Respiratory conditions (current), farm managers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

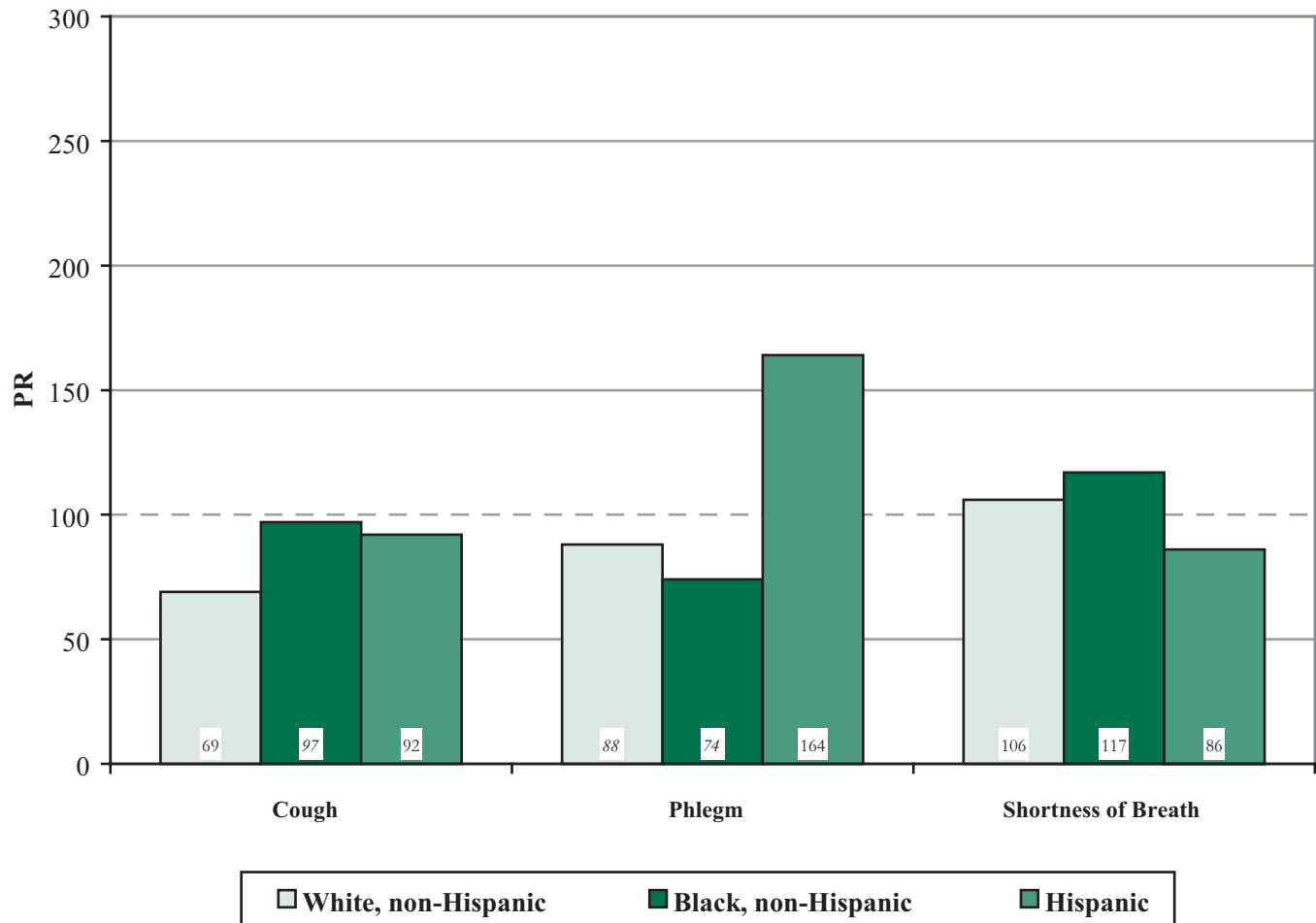
“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Race/Ethnicity within Respiratory Condition and Agricultural Group—
NHANES III**

**Figure 3-25. Respiratory conditions (current), other agricultural workers:
Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity,
U.S. residents age 17 and over, 1988–1994**



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

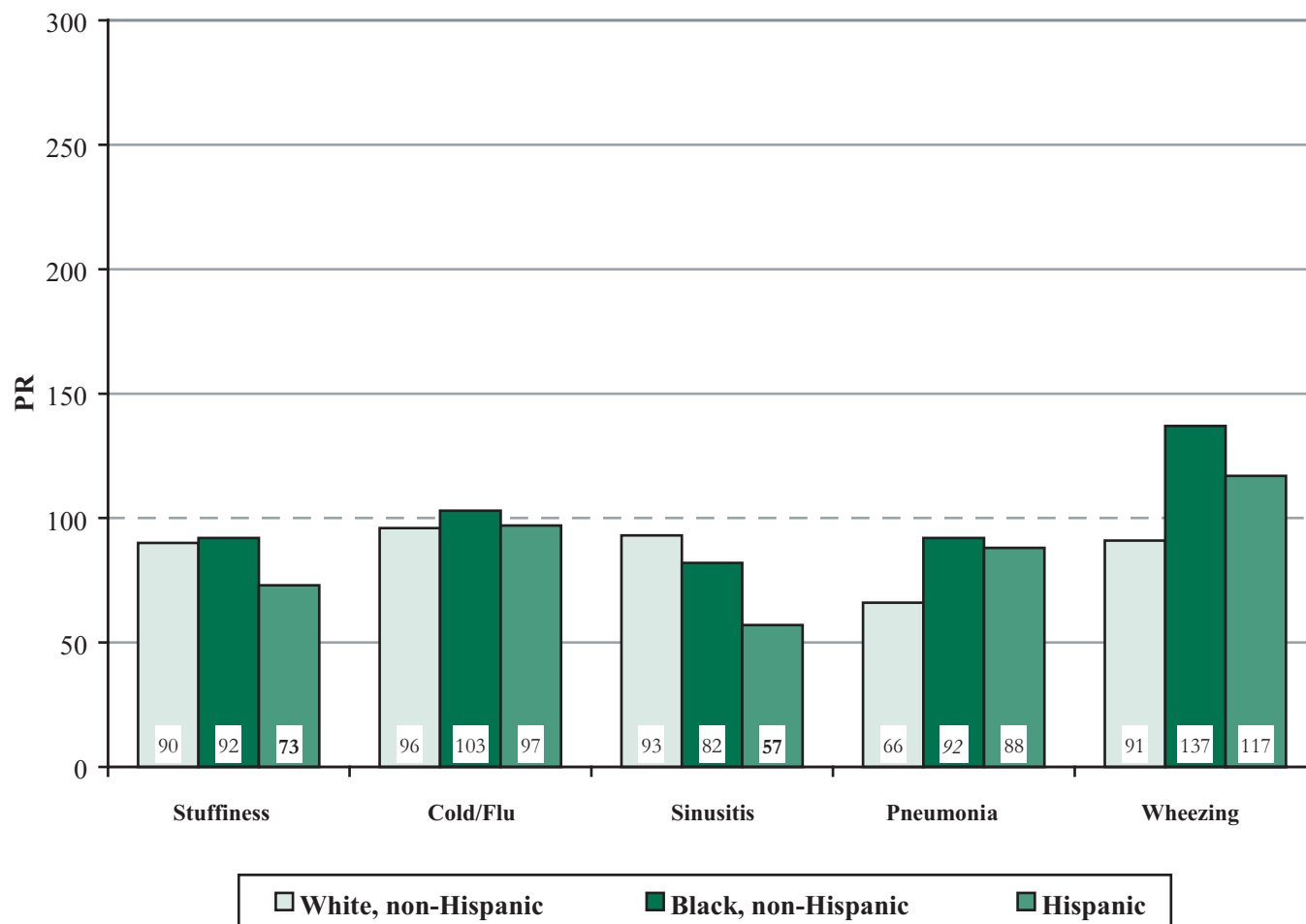
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-26. Respiratory conditions (past year), farm workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

“During the past 12 months, have you had pneumonia?”

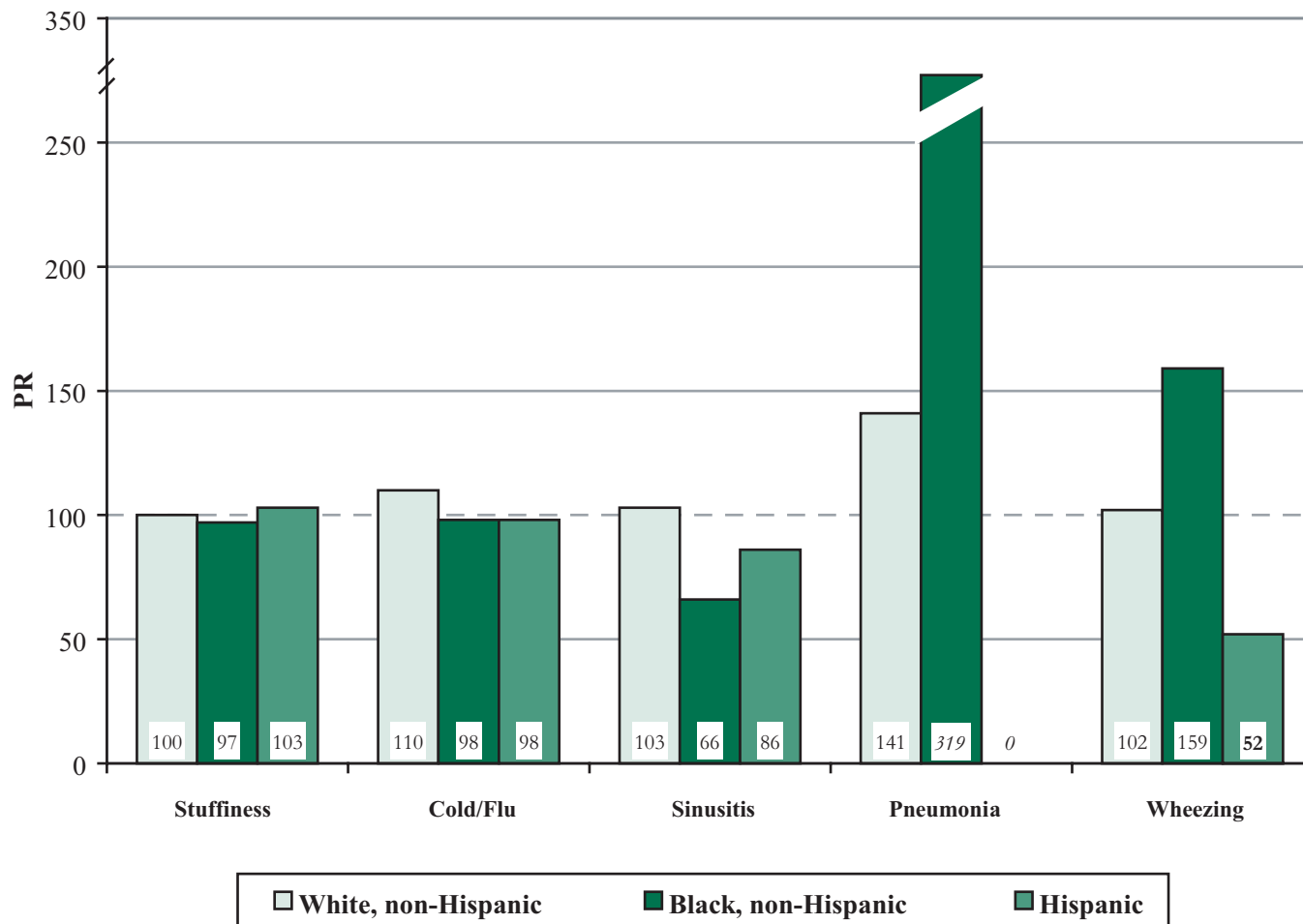
“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Race/Ethnicity within Respiratory Condition and Agricultural Group—
NHANES III**

Figure 3-27. Respiratory conditions (past year), farm managers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

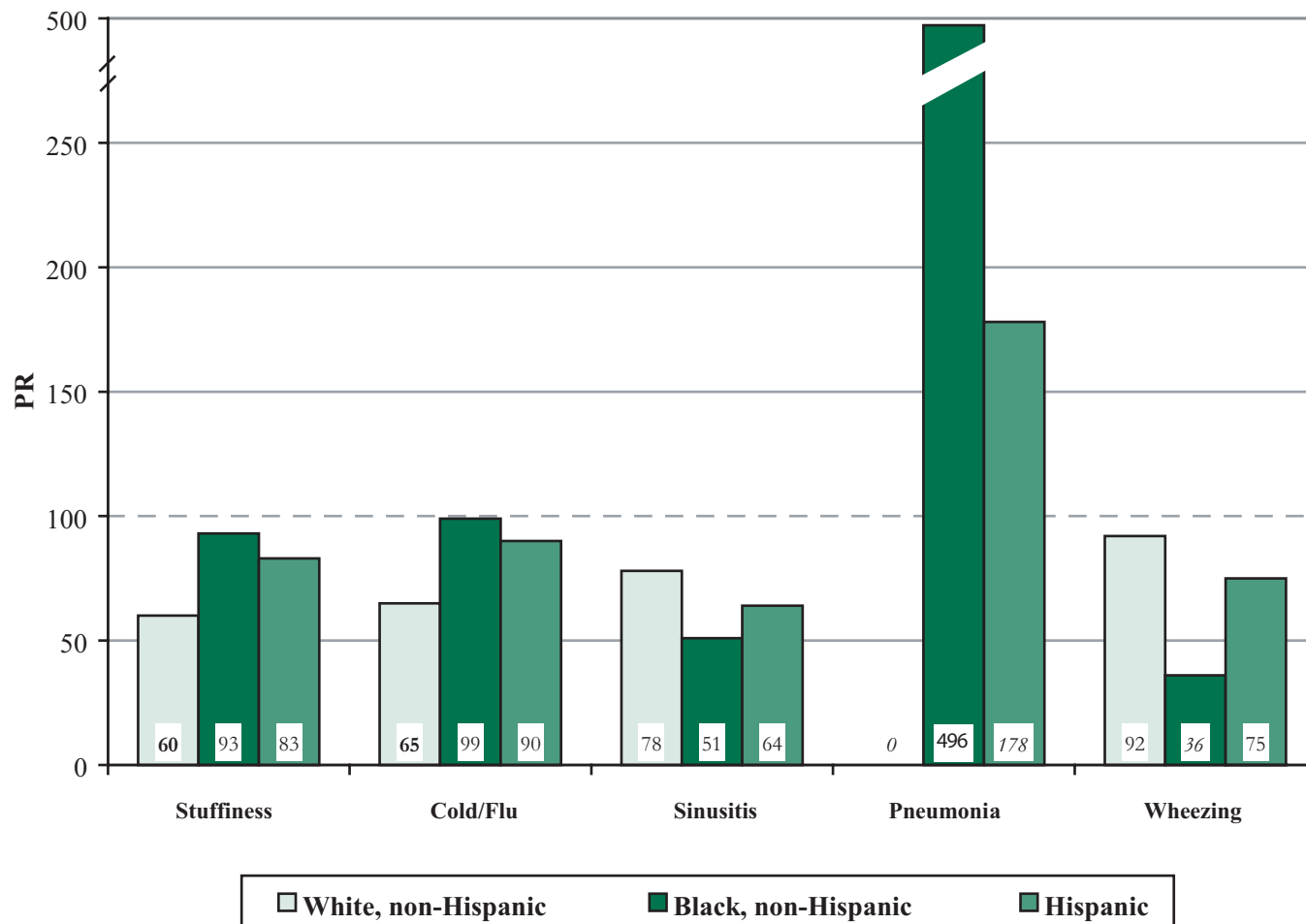
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-28. Respiratory conditions (past year), other agricultural workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

“During the past 12 months, have you had pneumonia?”

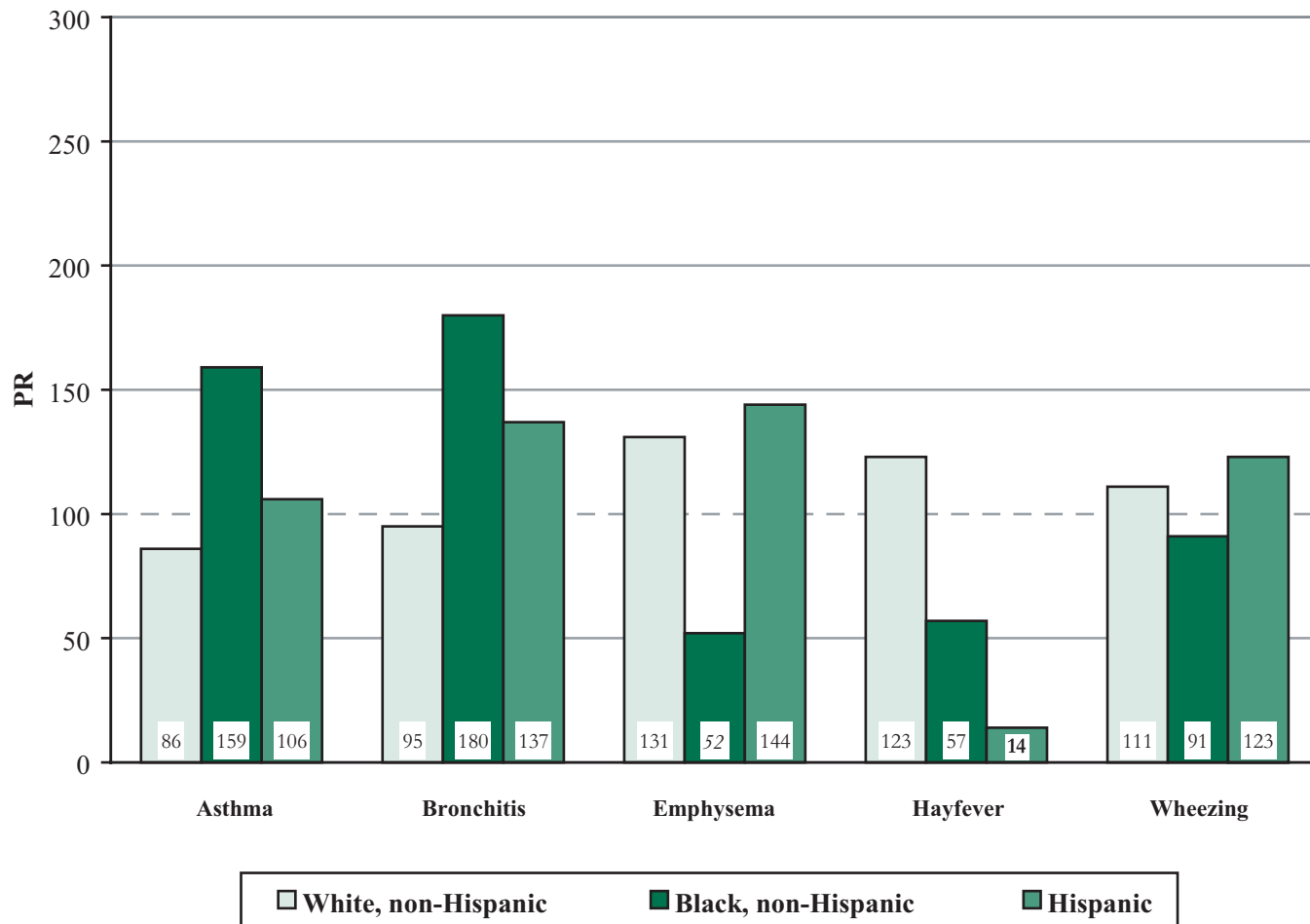
“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Race/Ethnicity within Respiratory Condition and Agricultural Group—
NHANES III**

Figure 3-29. Respiratory conditions (ever), farm workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

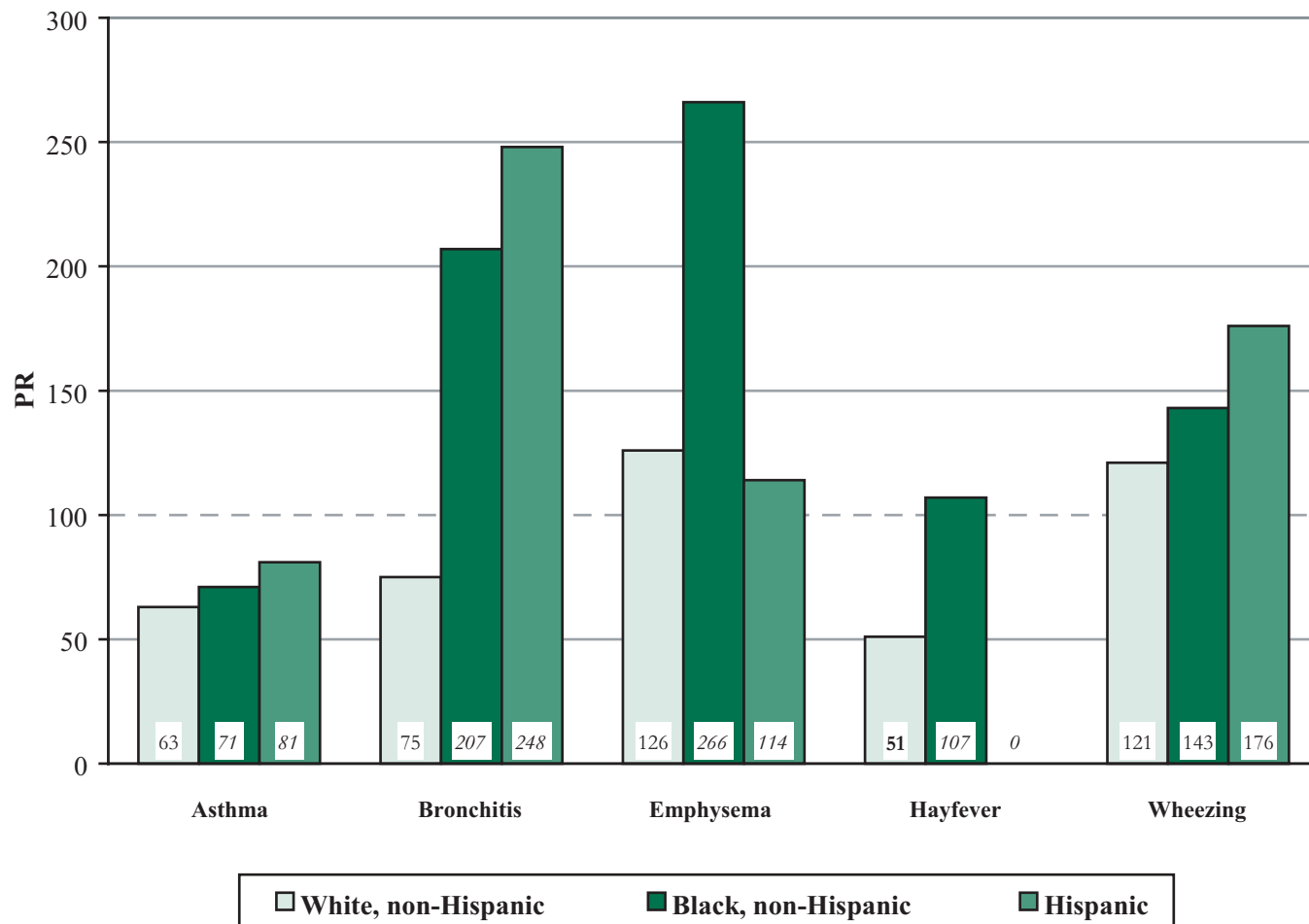
“Has a doctor ever told you that you had hay fever?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-30. Respiratory conditions (ever), farm managers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

“Has a doctor ever told you that you had hay fever?”

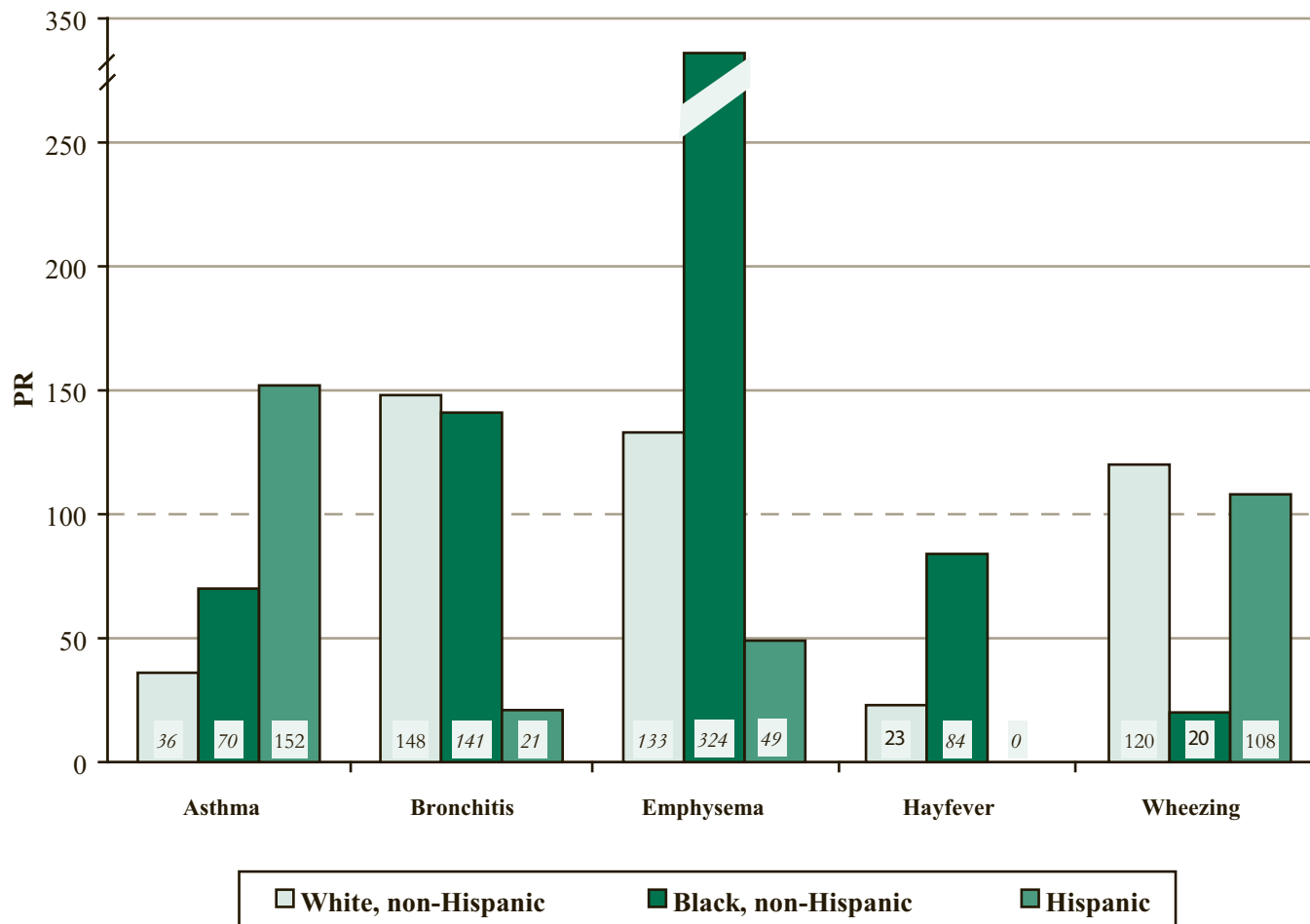
“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Race/Ethnicity within Respiratory Condition and Agricultural Group—NHANES III

Figure 3-31. Respiratory conditions (ever), other agricultural workers: Prevalence ratio (PR) adjusted for age, sex, and smoking status by race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

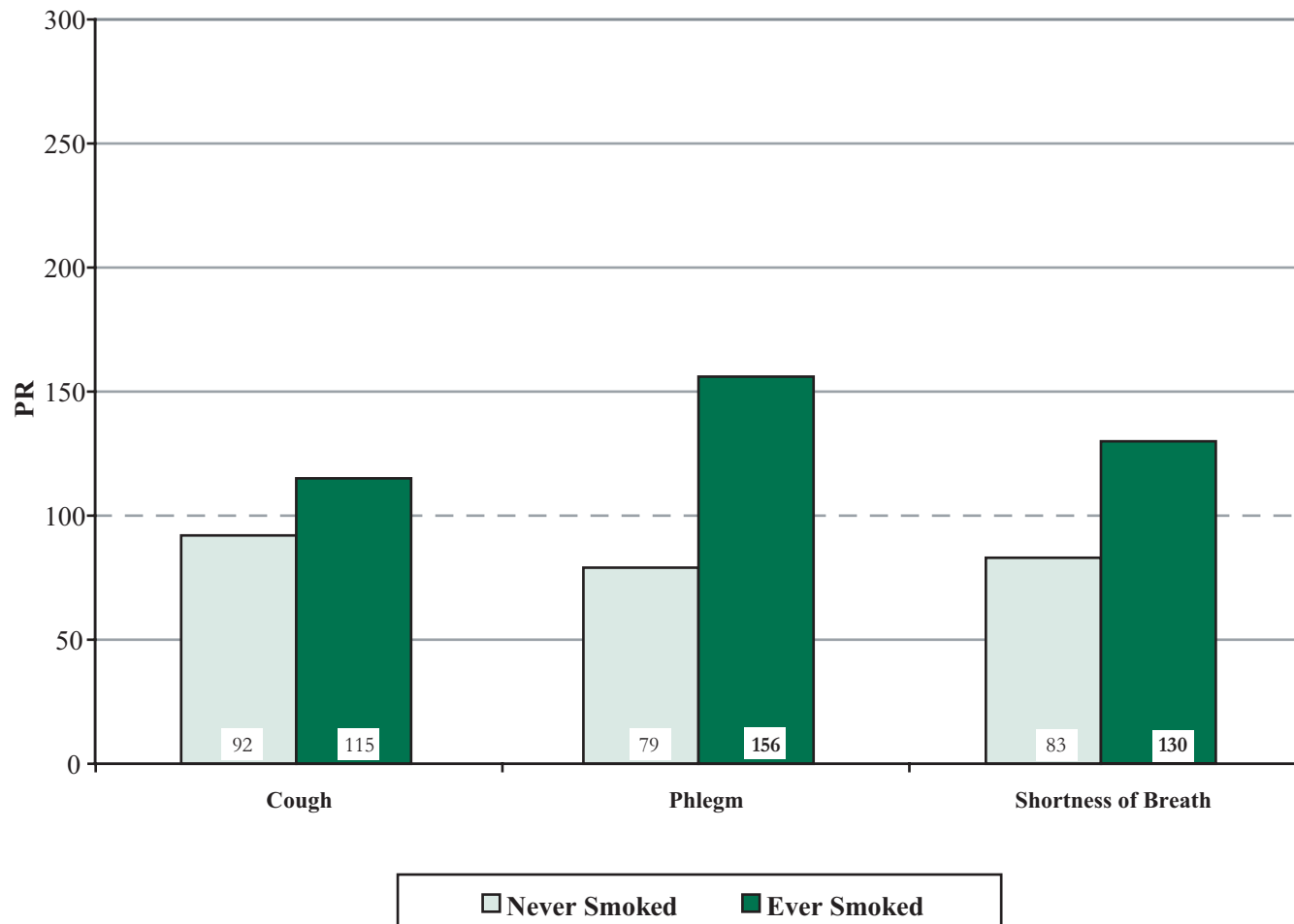
“Has a doctor ever told you that you had hay fever?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-32. Respiratory conditions (current), farm workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

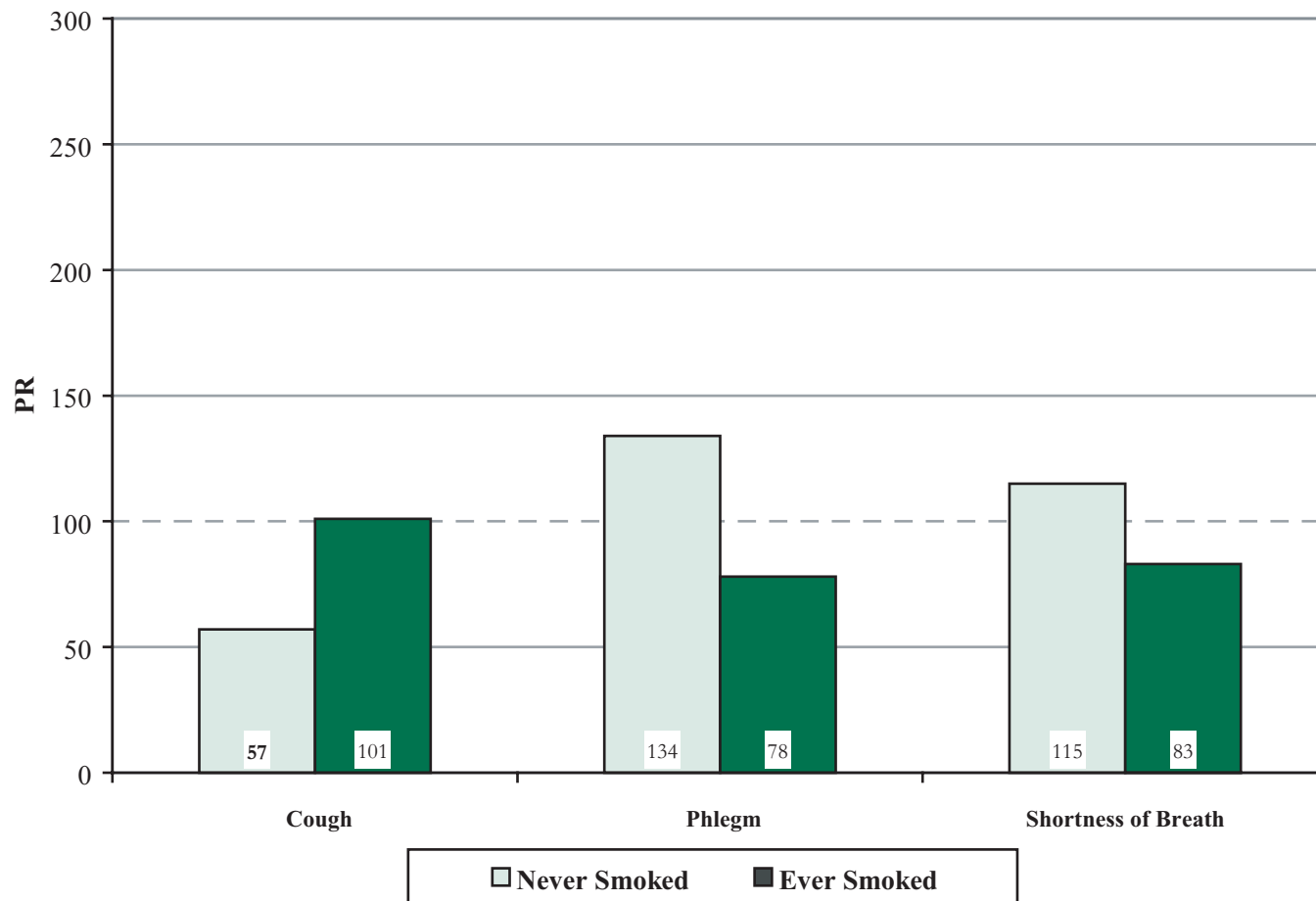
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-33. Respiratory conditions (current), farm managers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

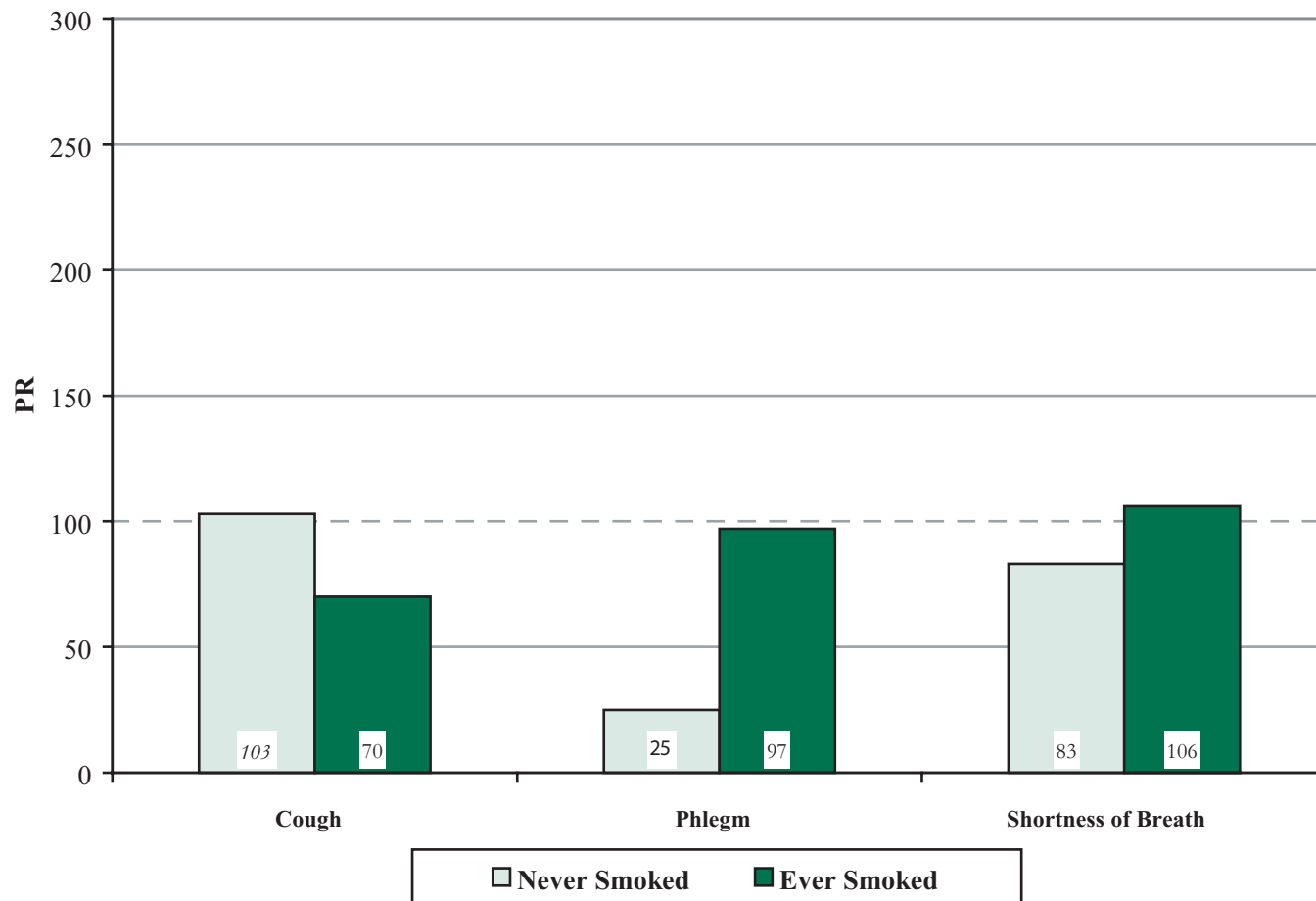
“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-34. Respiratory conditions (current), other agricultural workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Do you usually cough on most days for 3 consecutive months or more during the year?”

“Do you bring up phlegm on most days for 3 consecutive months or more during the year?”

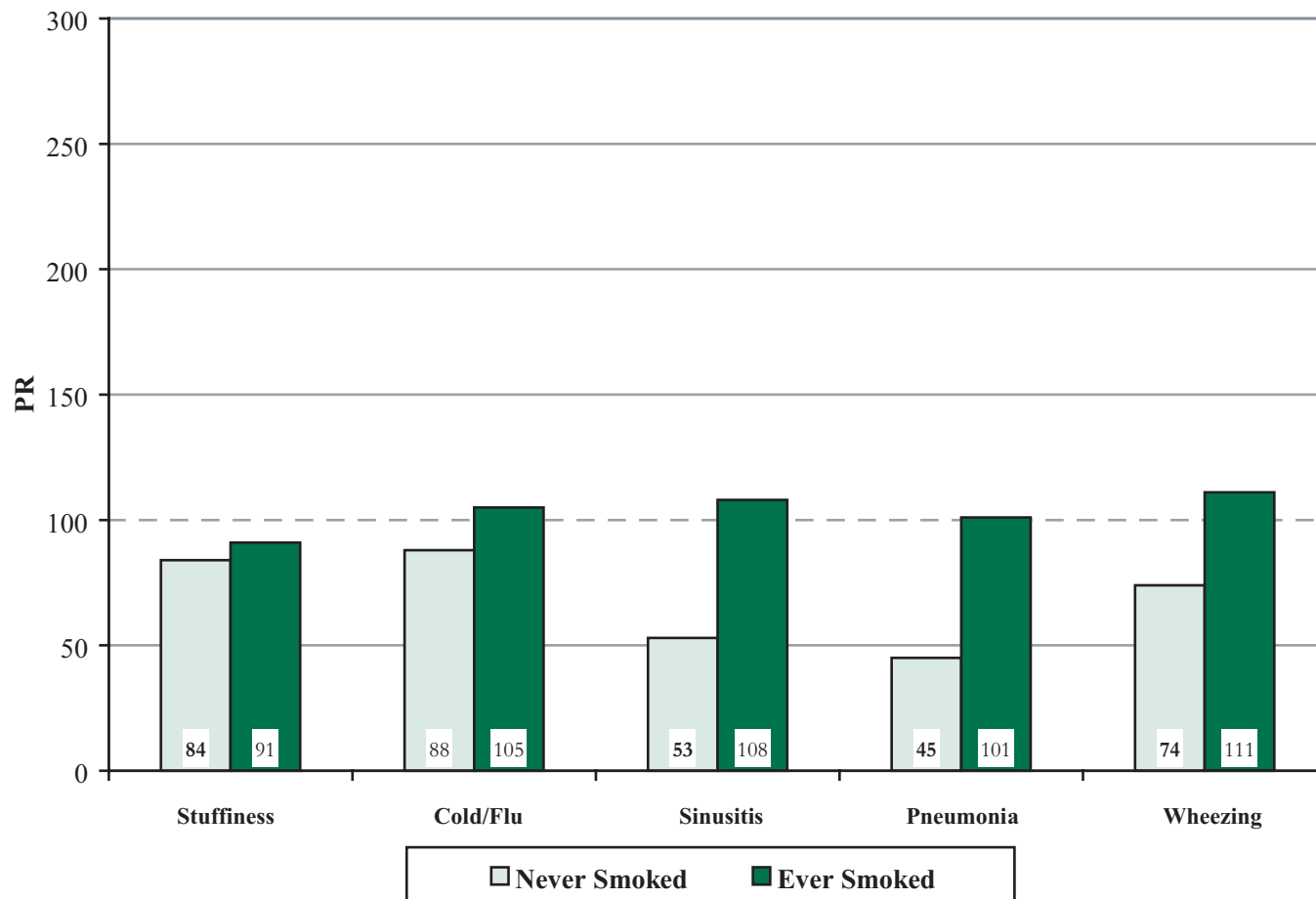
“Are you troubled by shortness of breath when hurrying on level ground or walking up a slight hill?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Smoking Status within Respiratory Condition and Agricultural Group—NHANES III

Figure 3-35. Respiratory conditions (past year), farm workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

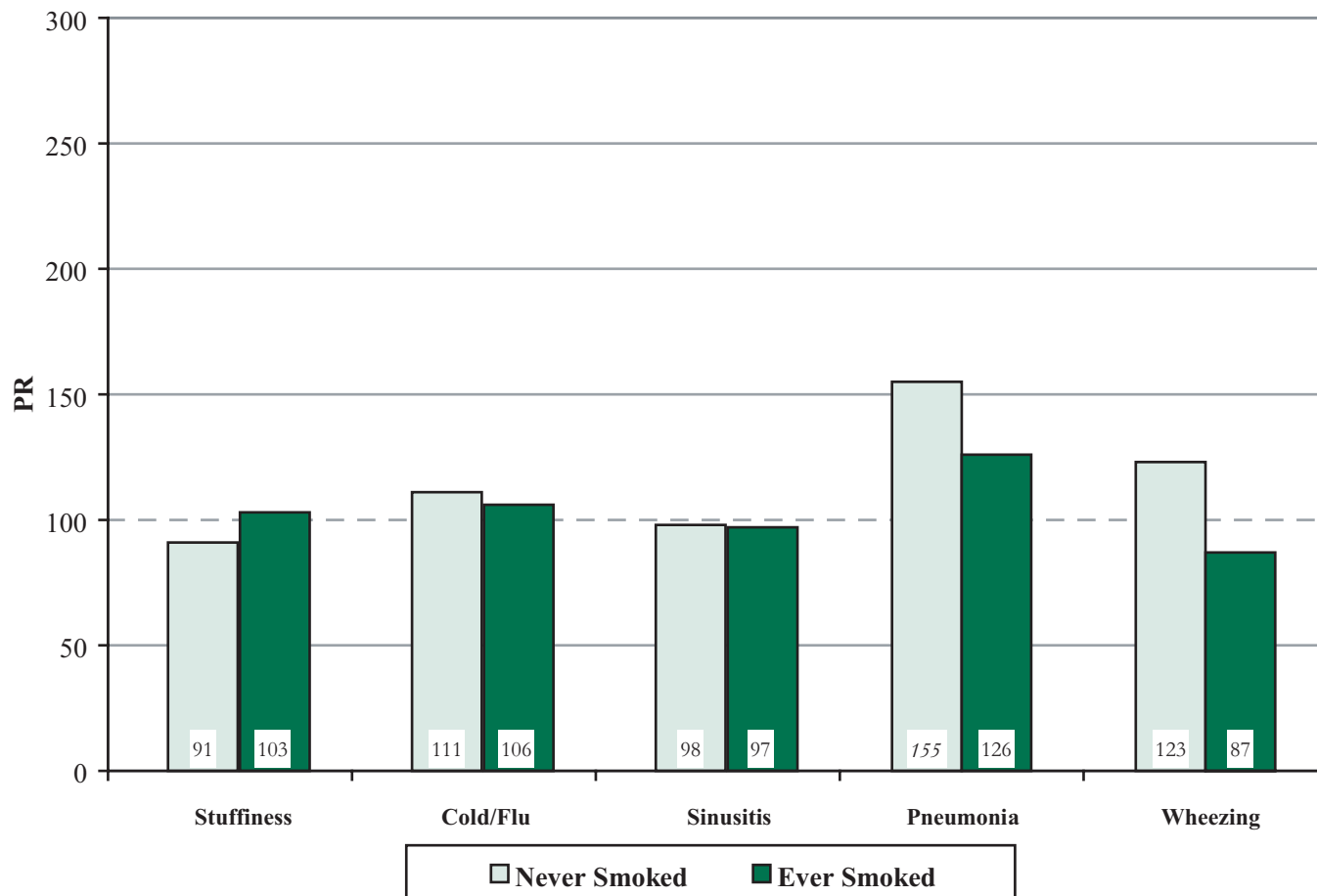
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-36. Respiratory conditions (past year), farm managers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

“During the past 12 months, have you had pneumonia?”

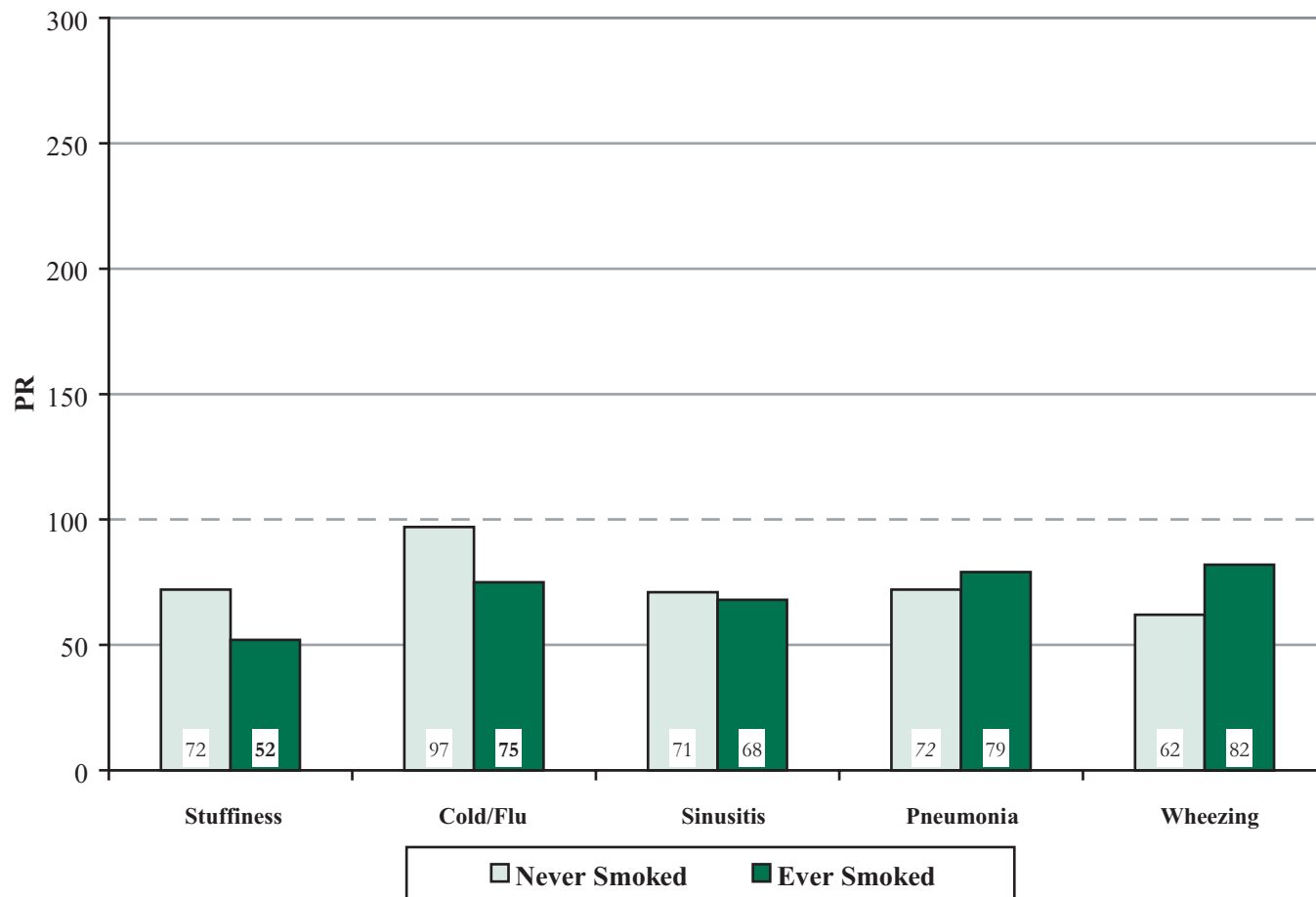
“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Morbidity by Smoking Status within Respiratory Condition and Agricultural Group—NHANES III

Figure 3-37. Respiratory conditions (past year), other agricultural workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“During the past 12 months, have you had any episodes of stuffy, itchy, or runny nose?”

“During the past 12 months, have you had a cold or the flu?”

“During the past 12 months, have you had sinusitis or sinus problems?”

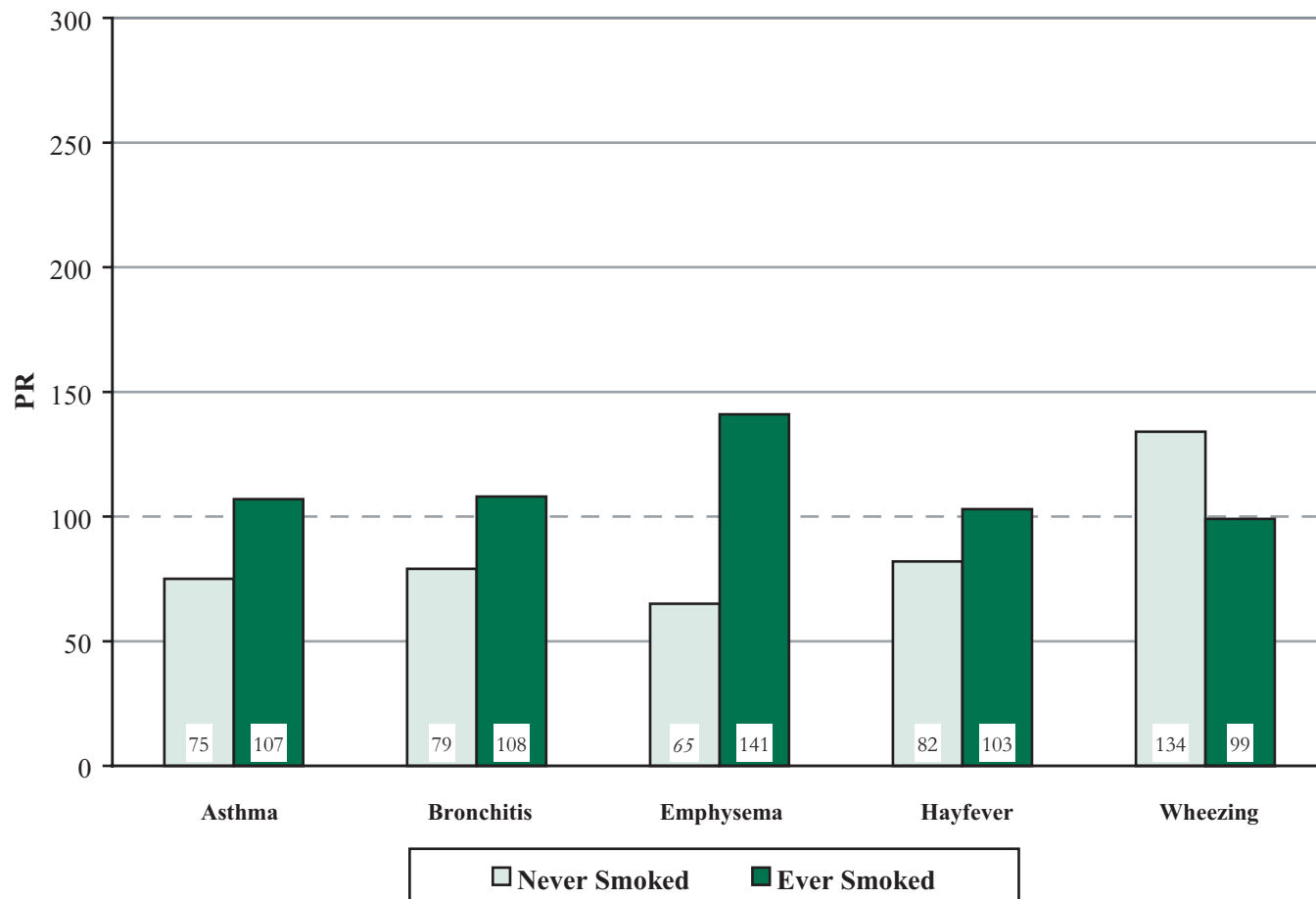
“During the past 12 months, have you had pneumonia?”

“Have you had wheezing or whistling in your chest at any time in the past 12 months?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-38. Respiratory conditions (ever), farm workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

“Has a doctor ever told you that you had hay fever?”

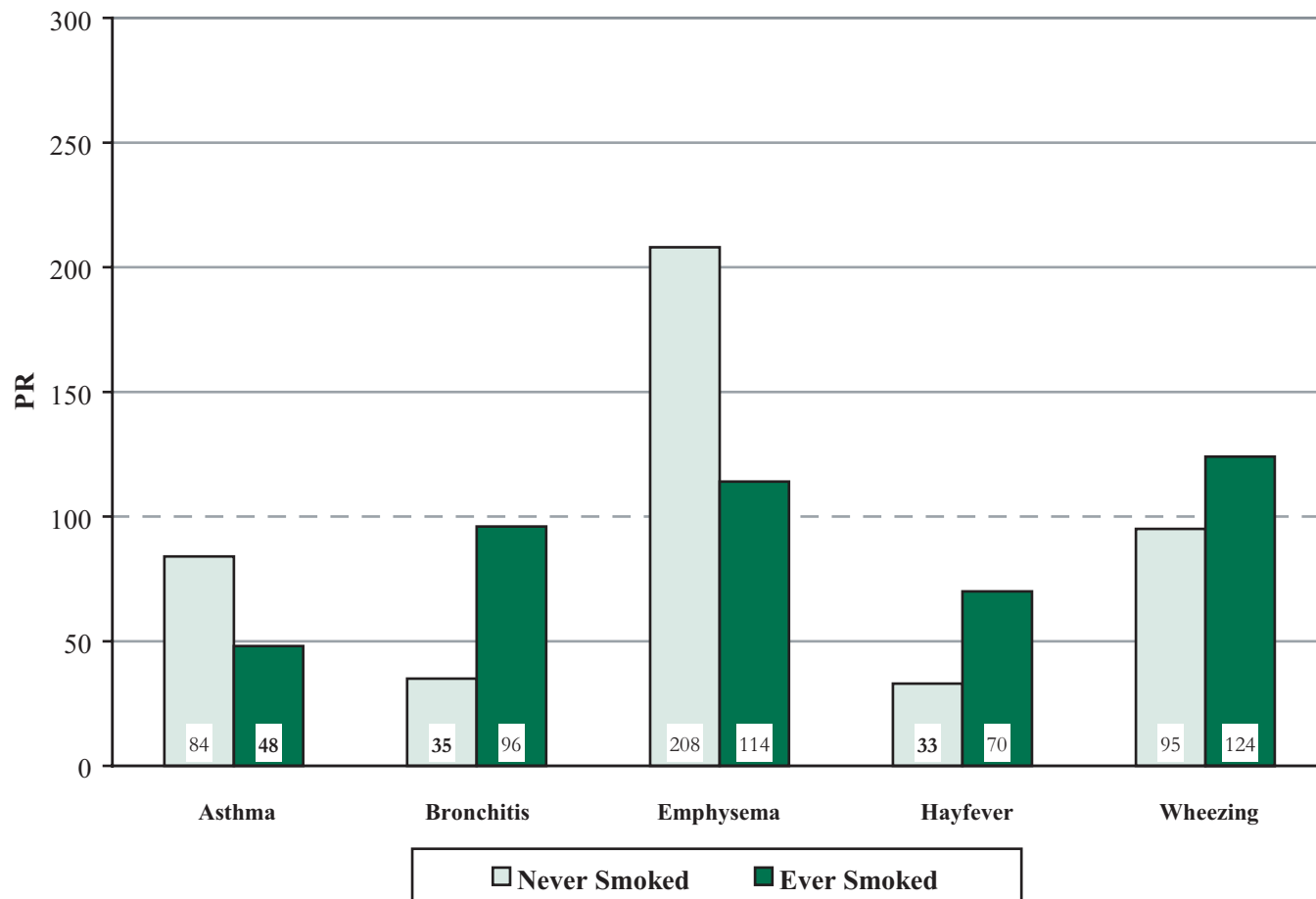
“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Smoking Status within Respiratory Condition and Agricultural Group—
NHANES III**

Figure 3-39. Respiratory conditions (ever), farm managers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

“Has a doctor ever told you that you had asthma?”

“Has a doctor ever told you that you had chronic bronchitis?”

“Has a doctor ever told you that you had emphysema?”

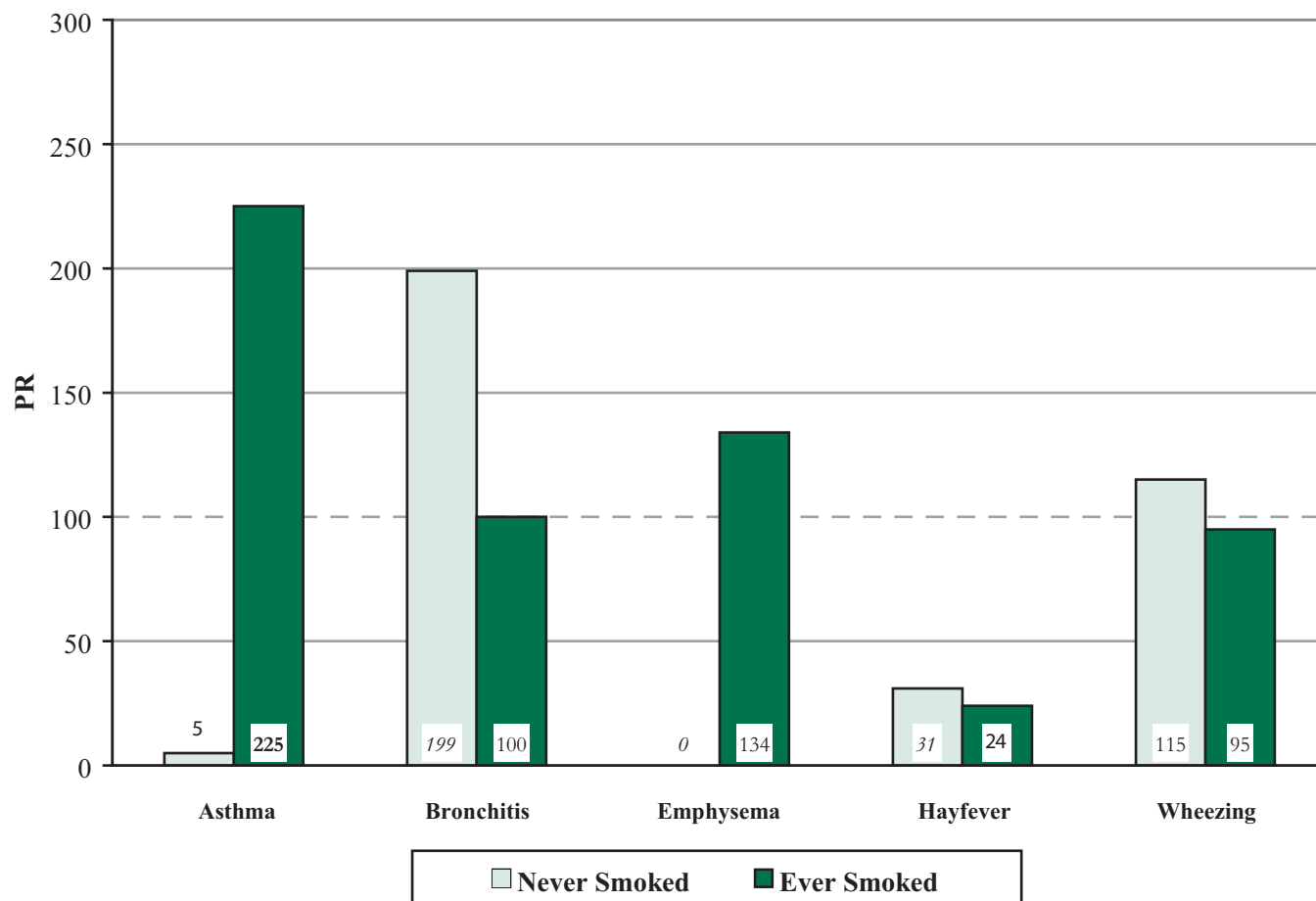
“Has a doctor ever told you that you had hay fever?”

“Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-40. Respiratory conditions (ever), other agricultural workers: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: Based on responses to the following questions:

- “Has a doctor ever told you that you had asthma?”
- “Has a doctor ever told you that you had chronic bronchitis?”
- “Has a doctor ever told you that you had emphysema?”
- “Has a doctor ever told you that you had hay fever?”
- “Apart from when you have a cold, does your chest ever sound wheezy or whistling?”

PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-20. Spirometry: Forced expiratory volume in one second (FEV₁), forced vital capacity (FVC), and peak expiratory flow (PEF) by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	FEV ₁ (L)		FVC (L)		PEF (L/sec)	
		Mean	SD	Mean	SD	Mean	SD
Farm Workers	268	3.29	1.18	4.26	1.39	7.49	2.70
Farm Managers	610	3.28	1.00	4.30	1.11	7.77	2.34
Other Agricultural Workers	152	3.66	0.78	4.53	0.92	8.73	2.11
All Non-agricultural Workers	14,811	3.22	0.97	4.07	1.14	7.60	2.32

L - liters L/sec - liters per second SD - standard deviation

NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-21. Spirometry: Percent predicted forced expiratory volume in one second (FEV₁), forced vital capacity (FVC), and peak expiratory flow (PEF) by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	FEV ₁ (L)		FVC (L)		PEF (L/sec)	
		Mean	SD	Mean	SD	Mean	SD
Farm Workers	268	95.2	18.6	99.0	16.3	92.1	23.0
Farm Managers	610	96.4	16.8	98.6	14.2	92.7	19.9
Other Agricultural Workers	152	99.1	12.8	101.3	12.2	98.7	20.5
All Non-agricultural Workers	14,811	95.6	15.9	98.1	13.9	95.6	19.6

L - liters L/sec - liters per second SD - standard deviation
 NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-22a. Obstructive abnormality: Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	110	660,225	22.5	173	143	209
Farm Managers	52	240,430	10.8	83	63	109
Other Agricultural Workers	19	140,157	13.1	101	61	158
All Non-agricultural Workers	1,823	20,100,351	13.0	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-22b. Restrictive abnormality: Estimated prevalence and prevalence ratio (PR) adjusted for age, sex, race/ethnicity, and smoking status by agricultural group, U.S. residents age 17 and over, 1988–1994

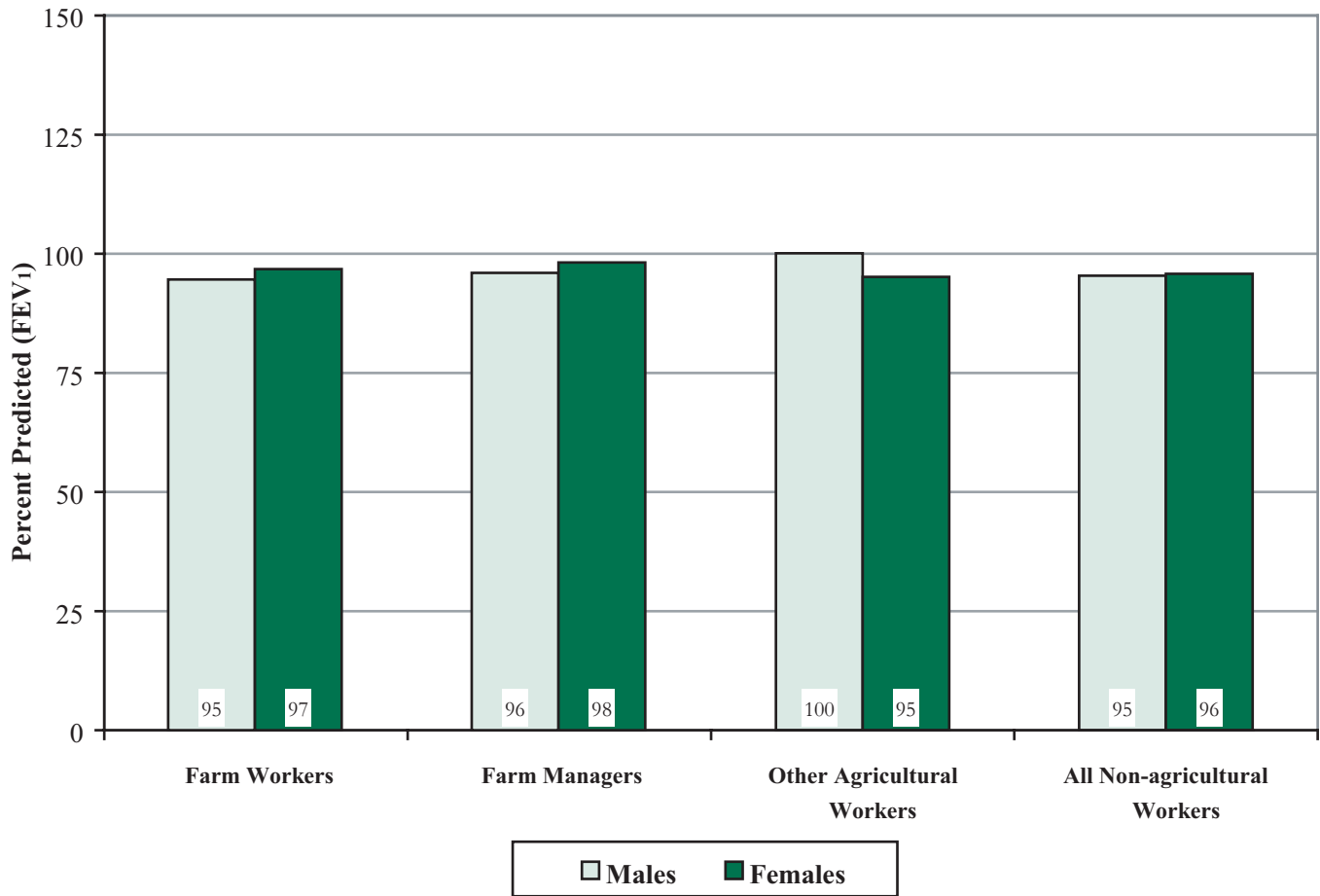
Worker Group	Number Observed	Estimated Prevalence of Condition in U.S.		PR	95% Confidence Interval	
		n	(%)		LCL	UCL
Farm Workers	48	165,352	5.6	80	59	106
Farm Managers	20	117,745	5.3	75	46	116
Other Agricultural Workers	6	27,978	2.6	37	14	81
All Non-agricultural Workers	1,024	10,906,623	7.1	100		

n - estimated number LCL - lower confidence limit UCL - upper confidence limit

NOTE: Estimated number in U.S., estimated percent with condition, and PR are based on weighted sample results. PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-41. Percent predicted forced expiratory volume in one second (FEV₁) by agricultural group and sex, U.S. residents age 17 and over, 1988–1994

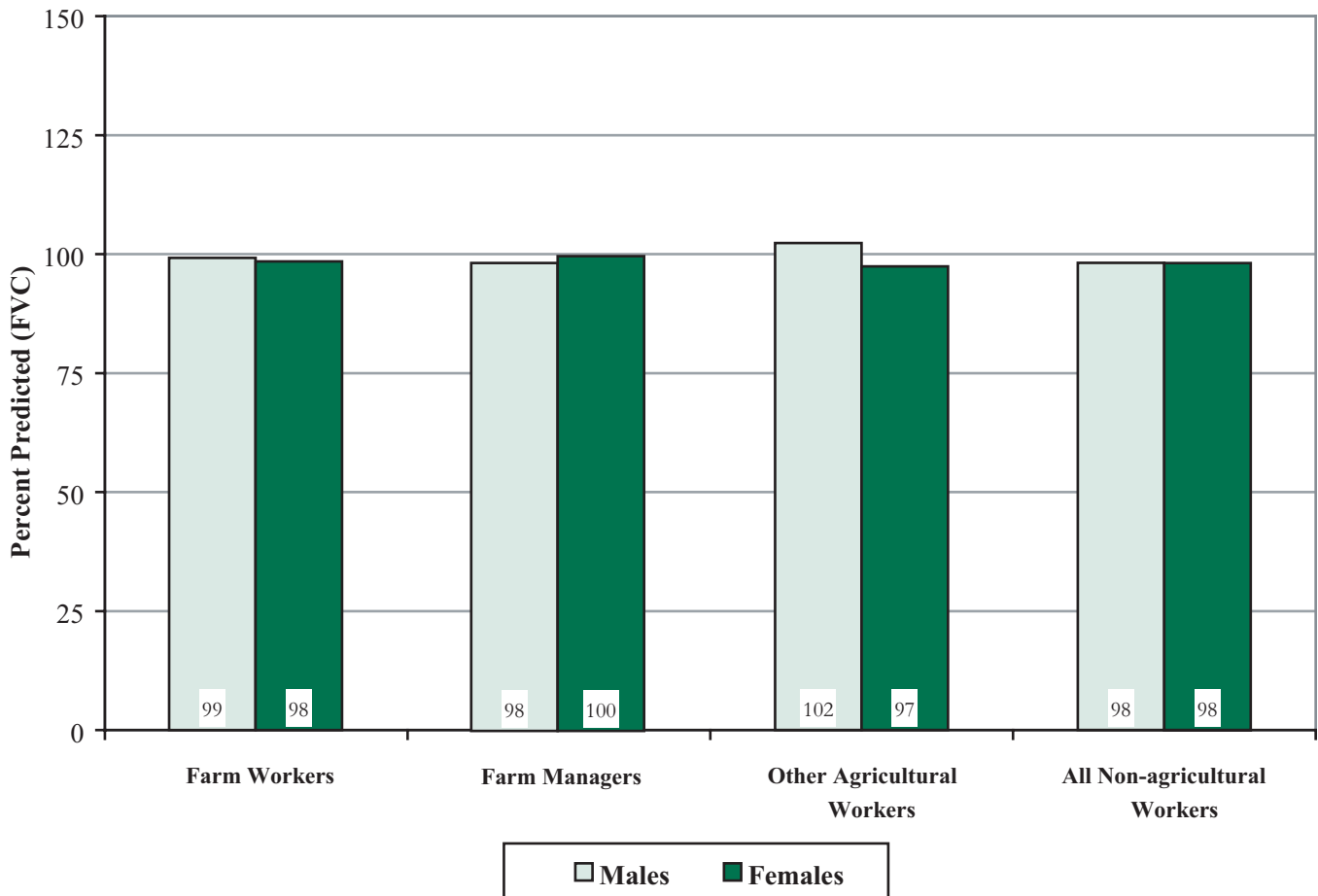


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Agricultural Group and Sex within Spirometry Index:
FEV₁, FVC, PEF—NHANES III**

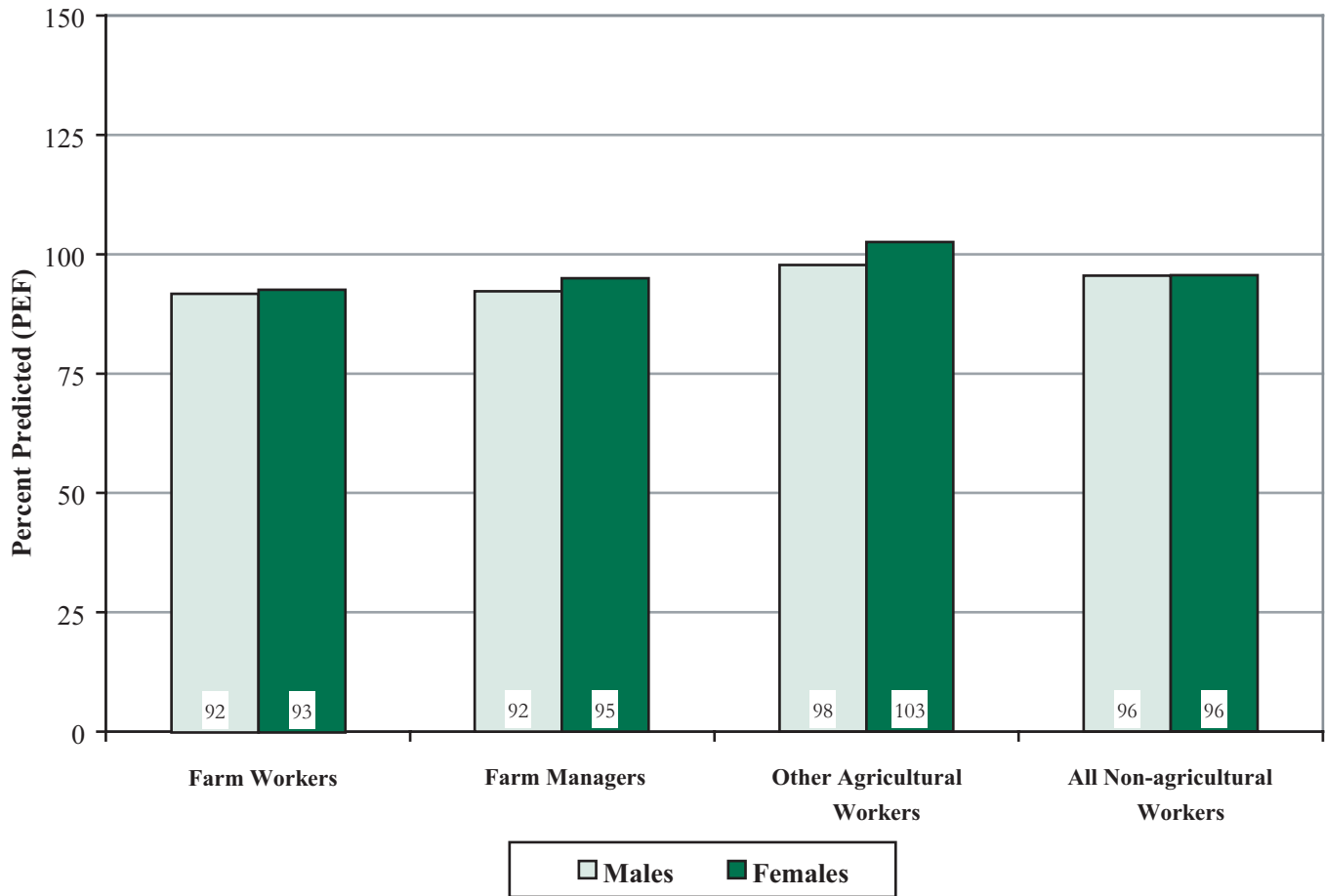
Figure 3-42. Percent predicted forced vital capacity (FVC) by agricultural group and sex, U.S. residents age 17 and over, 1988–1994



NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-43. Percent predicted peak expiratory flow (PEF) by agricultural group and sex, U.S. residents age 17 and over, 1988–1994

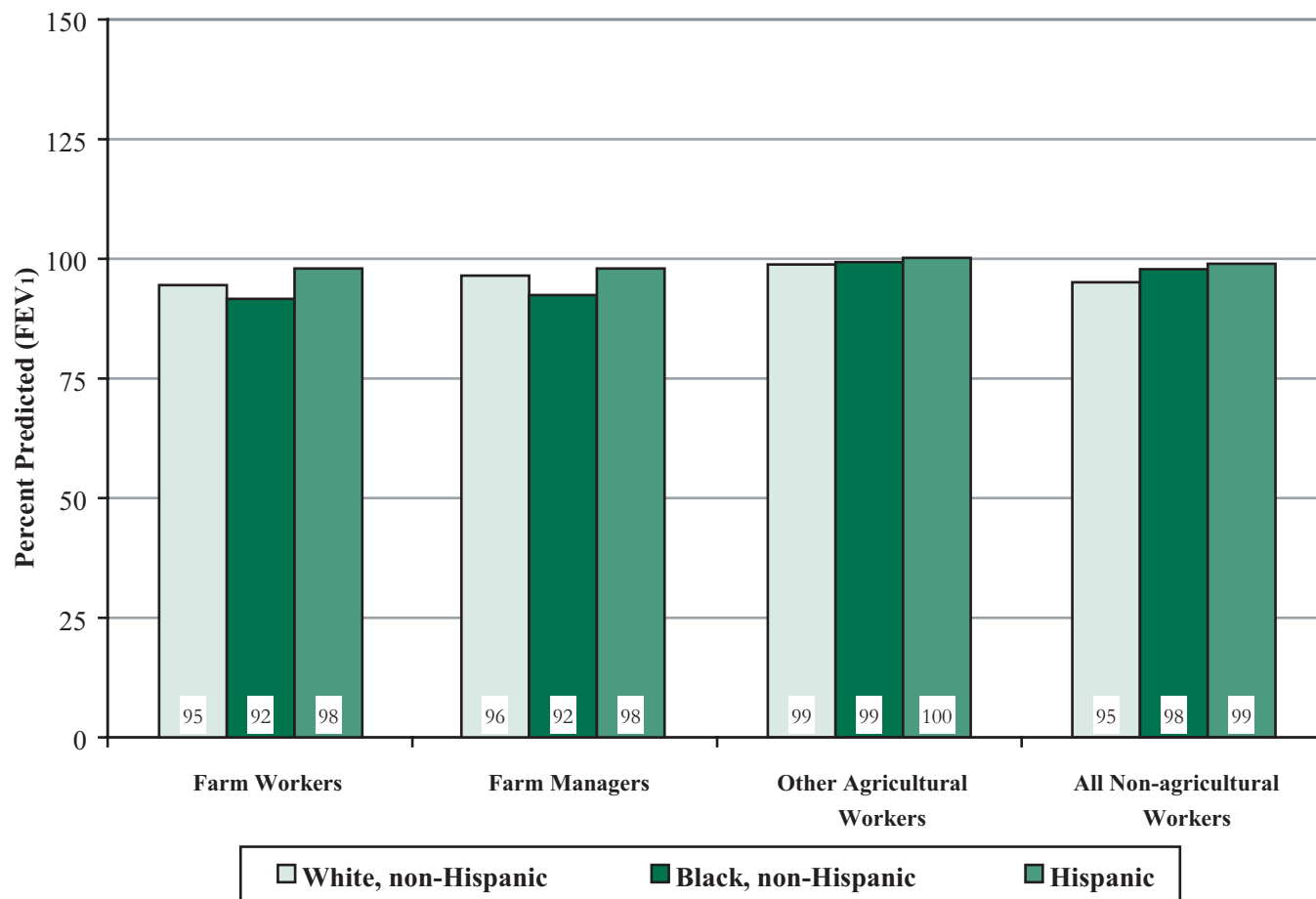


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Agricultural Group and Race/Ethnicity within Spirometry Index:
FEV₁, FVC, PEF—NHANES III**

Figure 3-44. Percent predicted forced expiratory volume in one second (FEV₁) by agricultural group and race/ethnicity, U.S. residents age 17 and over, 1988–1994

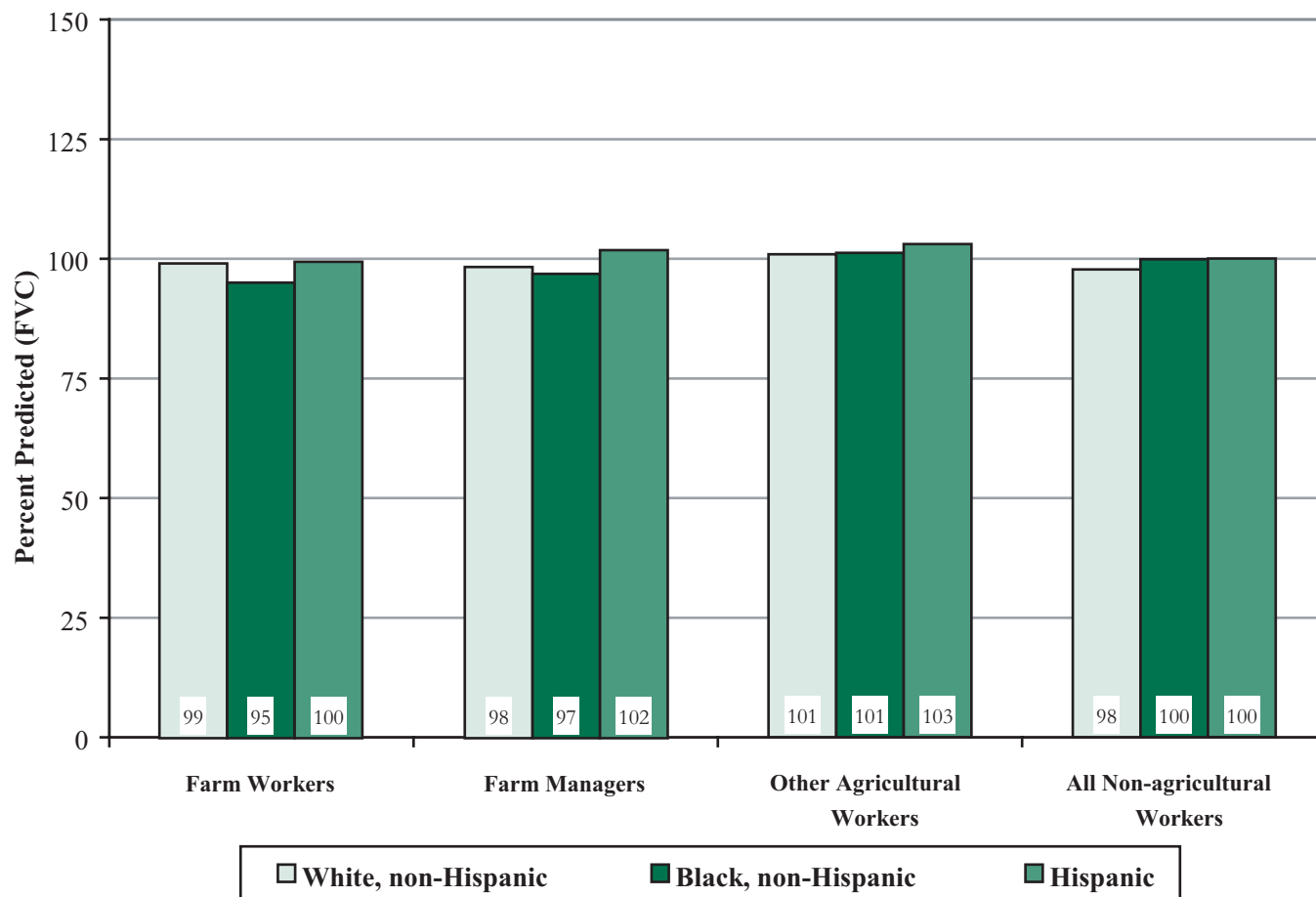


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

*Morbidity by Agricultural Group and Race/Ethnicity within Spirometry Index:
FEV₁, FVC, PEF—NHANES III*

Figure 3-45. Percent predicted forced vital capacity (FVC) by agricultural group and race/ethnicity, U.S. residents age 17 and over, 1988–1994

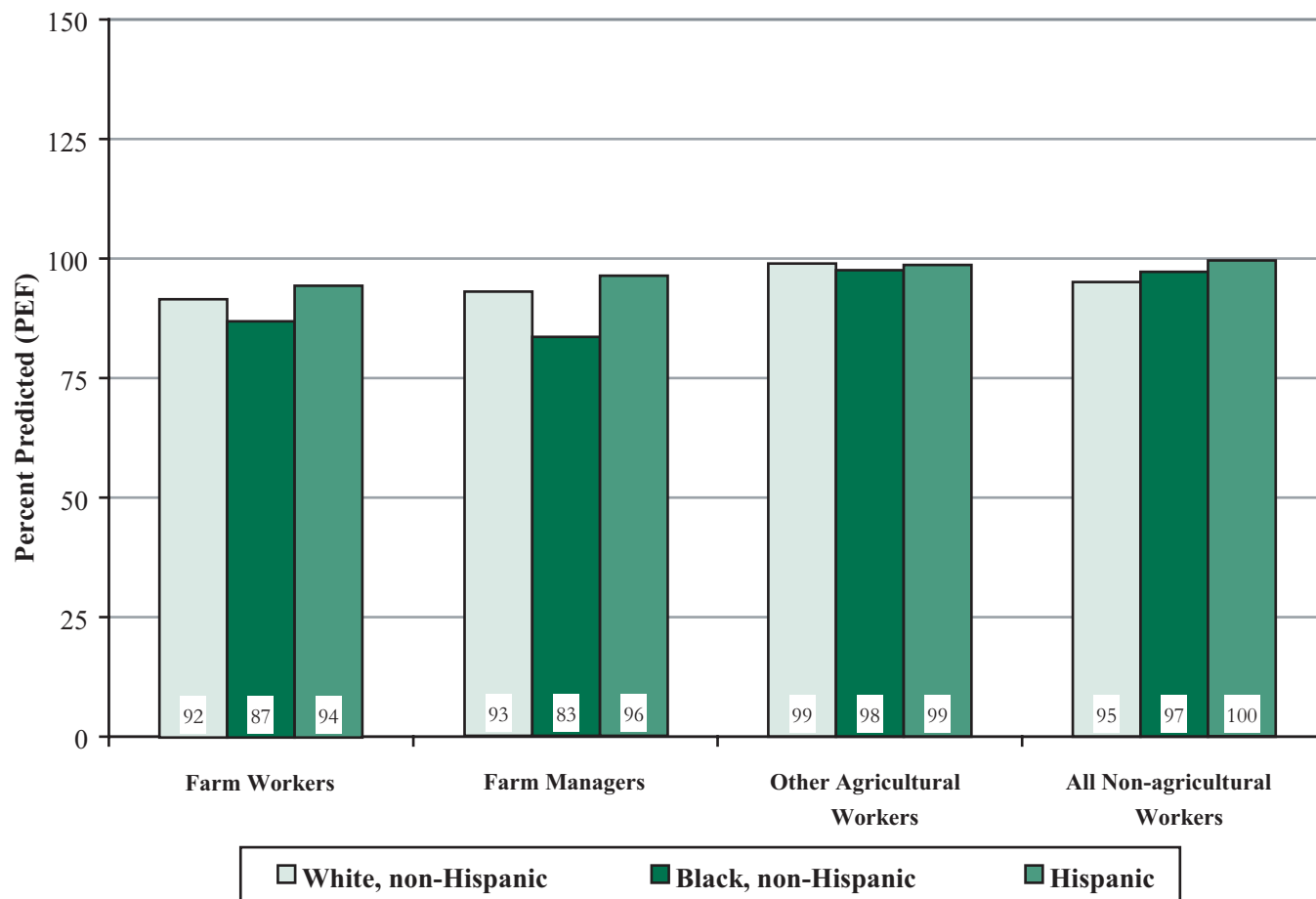


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Agricultural Group and Race/Ethnicity within Spirometry Index:
FEV₁, FVC, PEF—NHANES III**

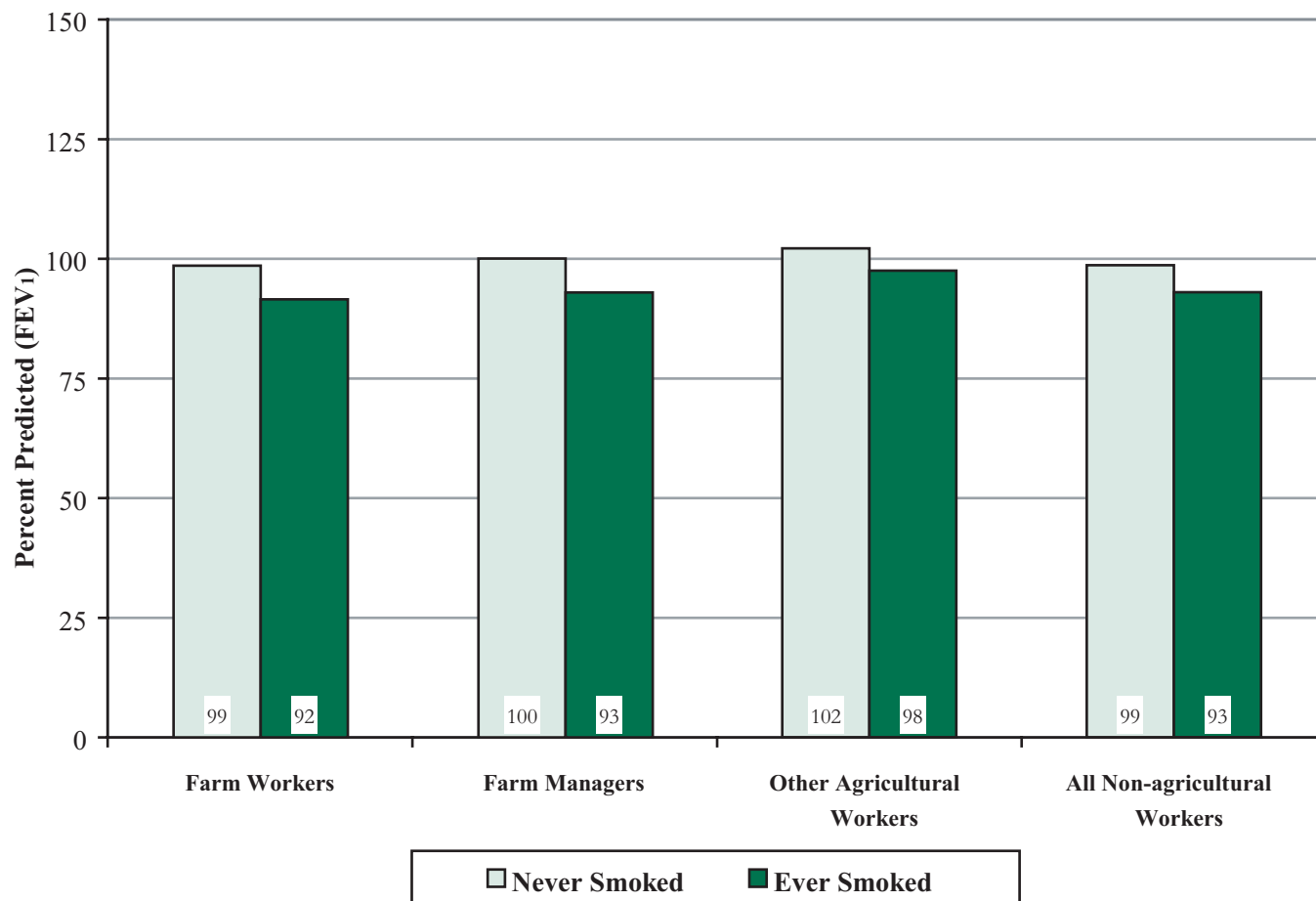
Figure 3-46. Percent predicted peak expiratory flow (PEF) by agricultural group and race/ethnicity, U.S. residents age 17 and over, 1988–1994



NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-47. Percent predicted forced expiratory volume in one second (FEV₁) by agricultural group and smoking status, U.S. residents age 17 and over, 1988–1994

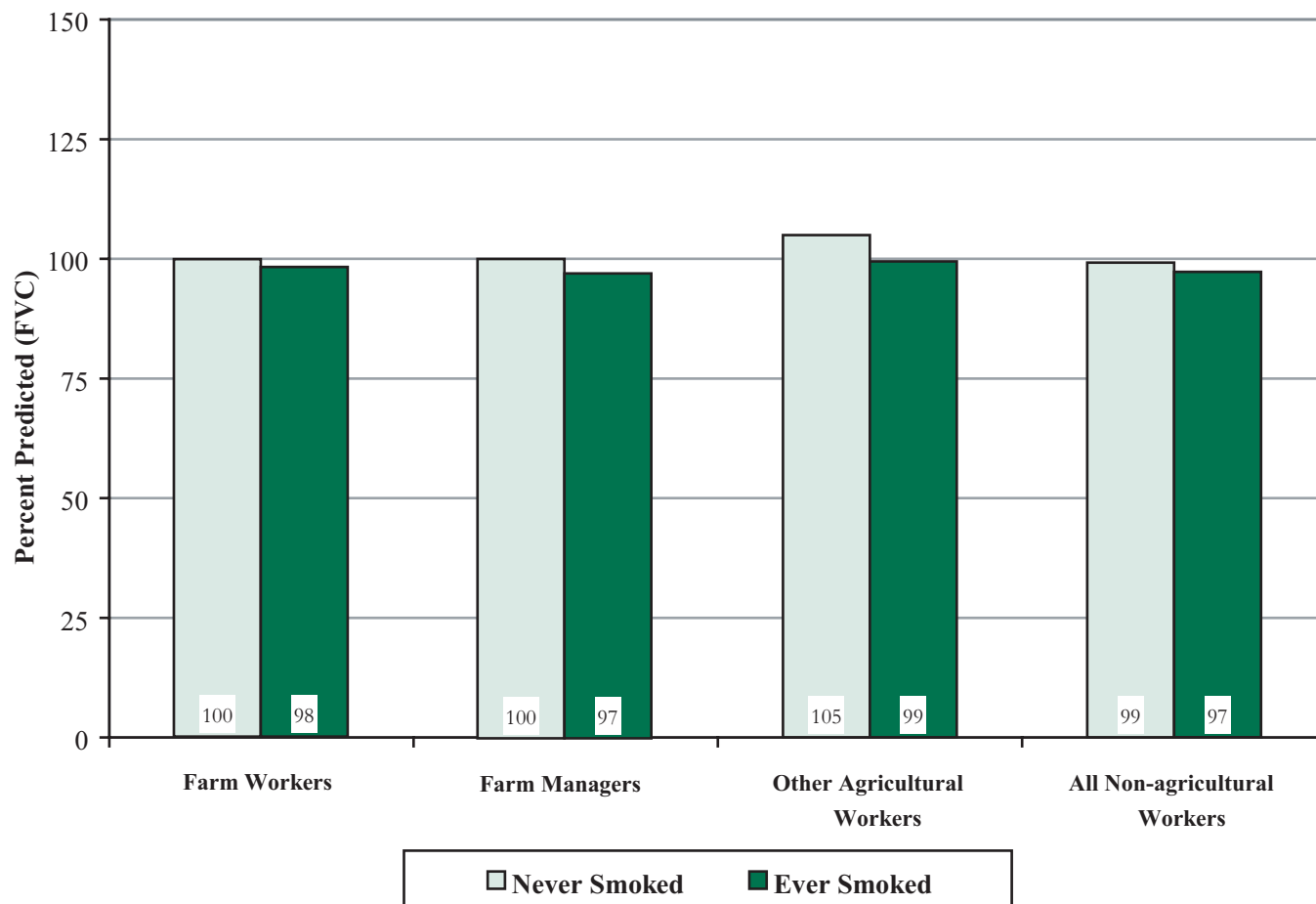


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

**Morbidity by Agricultural Group and Smoking Status within Spirometry Index:
FEV₁, FVC, PEF—NHANES III**

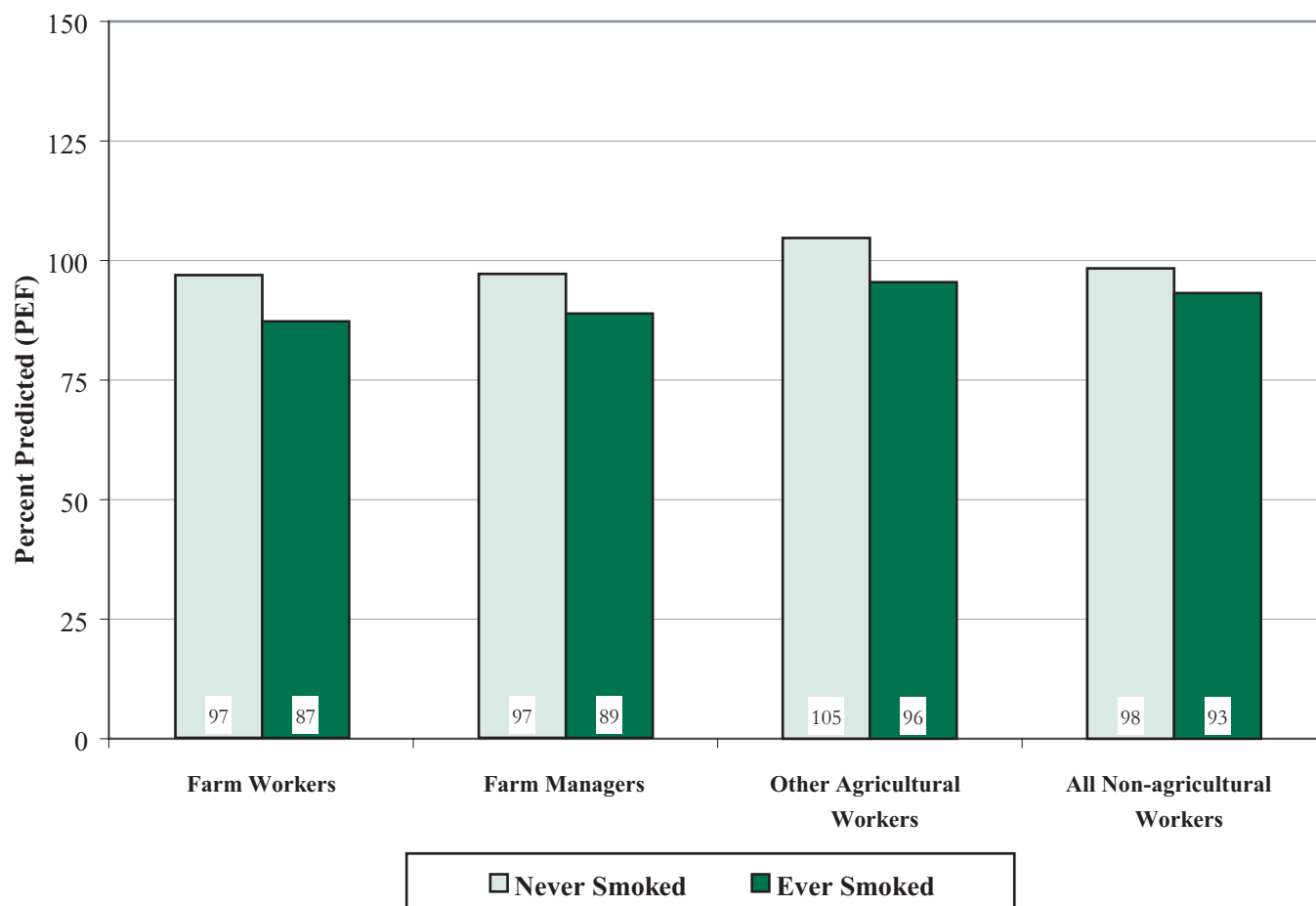
Figure 3-48. Percent predicted forced vital capacity (FVC) by agricultural group and smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Figure 3-49. Percent predicted peak expiratory flow (PEF) by agricultural group and smoking status, U.S. residents age 17 and over, 1988–1994

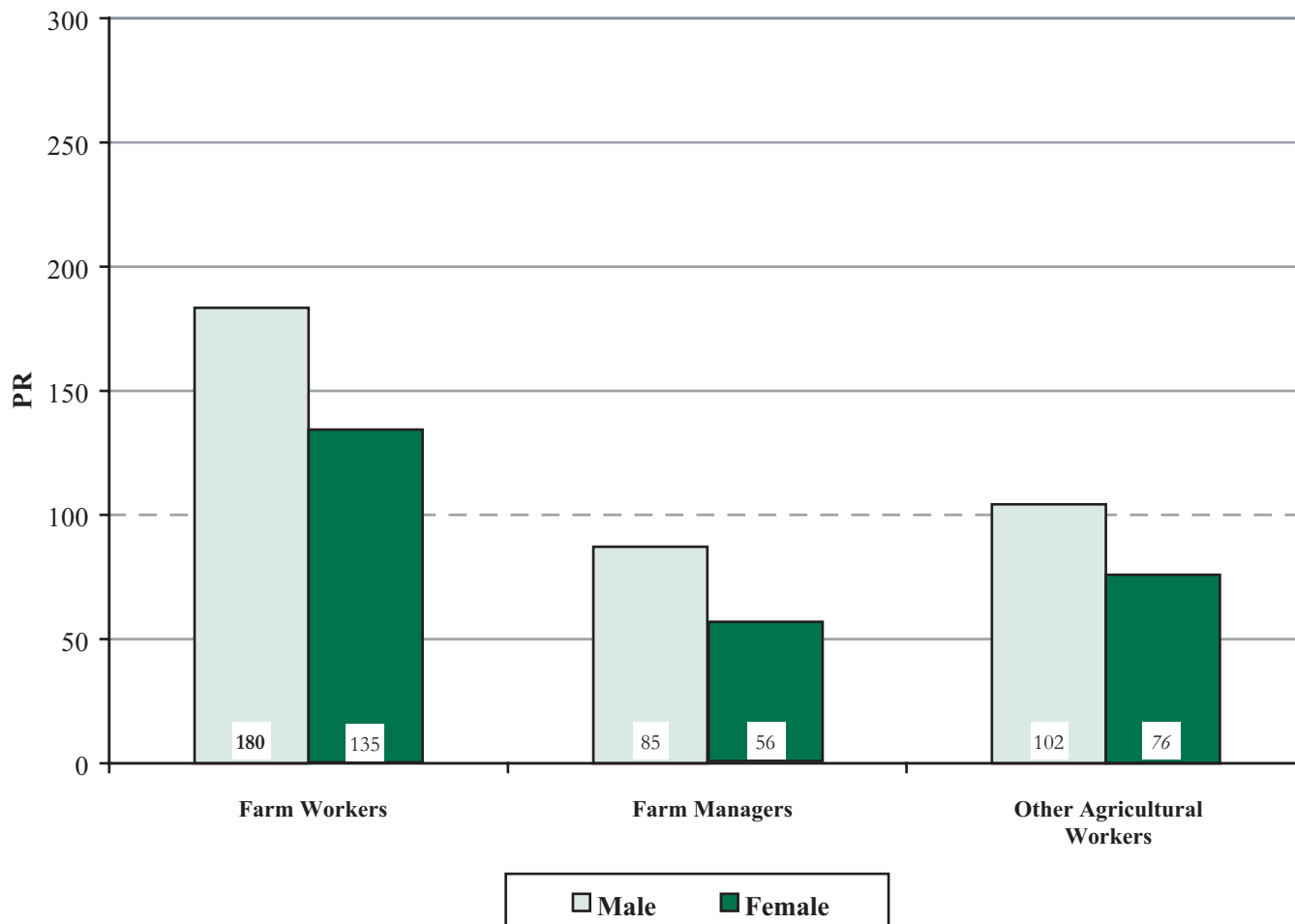


NOTE: See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

***Morbidity by Agricultural Group and Sex within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III***

Figure 3-50. Spirometry, obstructive abnormality: Prevalence ratio (PR) adjusted for age and race/ethnicity by agricultural group and sex, U.S. residents age 17 and over, 1988–1994

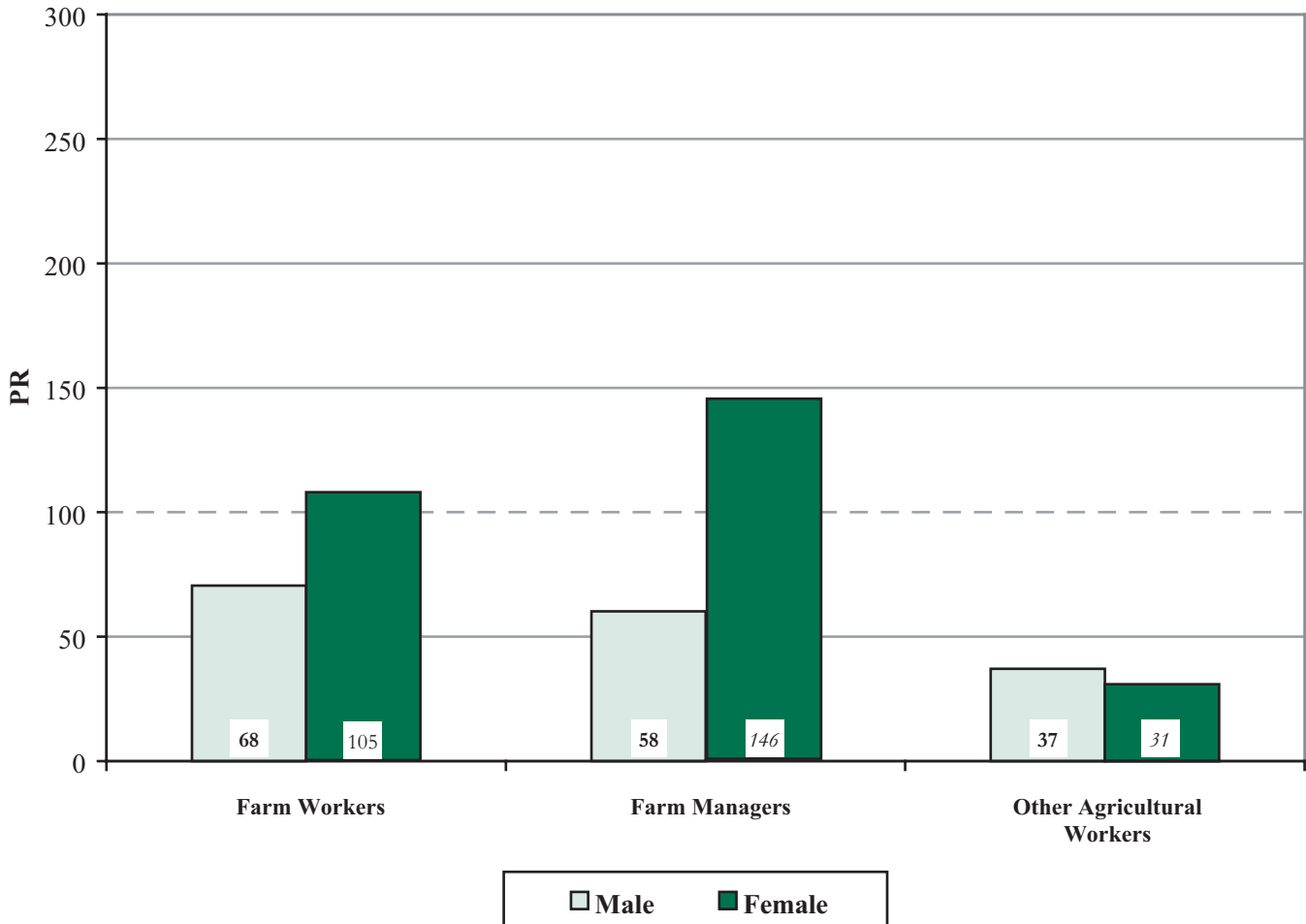


NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

*Morbidity by Agricultural Group and Sex within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III*

Figure 3-51. Spirometry, restrictive abnormality: Prevalence ratio (PR) adjusted for age and race/ethnicity by agricultural group and sex, U.S. residents age 17 and over, 1988–1994

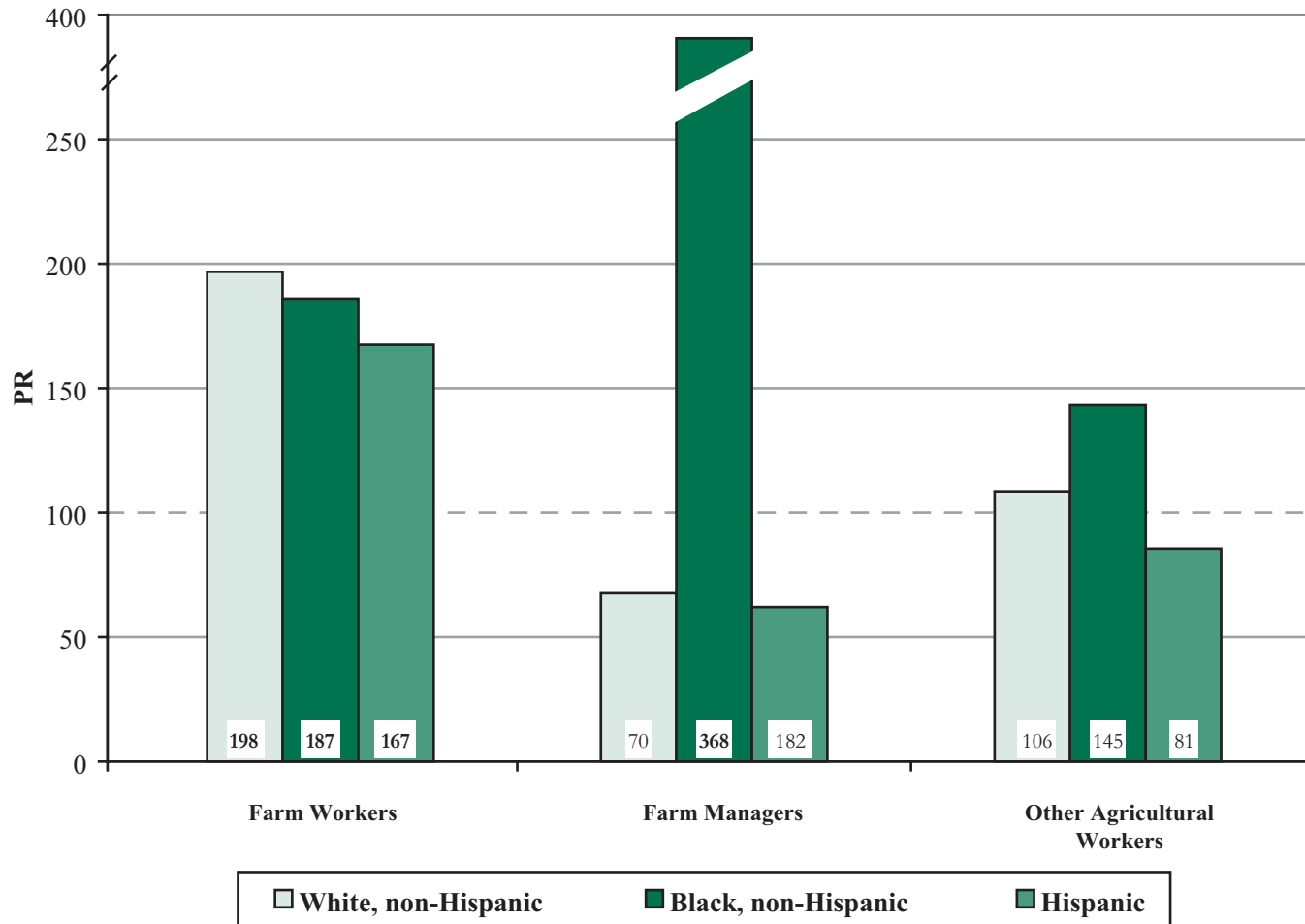


NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

***Morbidity by Agricultural Group and Race/Ethnicity within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III***

Figure 3-52. Spirometry, obstructive abnormality: Prevalence ratio (PR) adjusted for age and sex by agricultural group and race/ethnicity, U.S. residents age 17 and over, 1988–1994

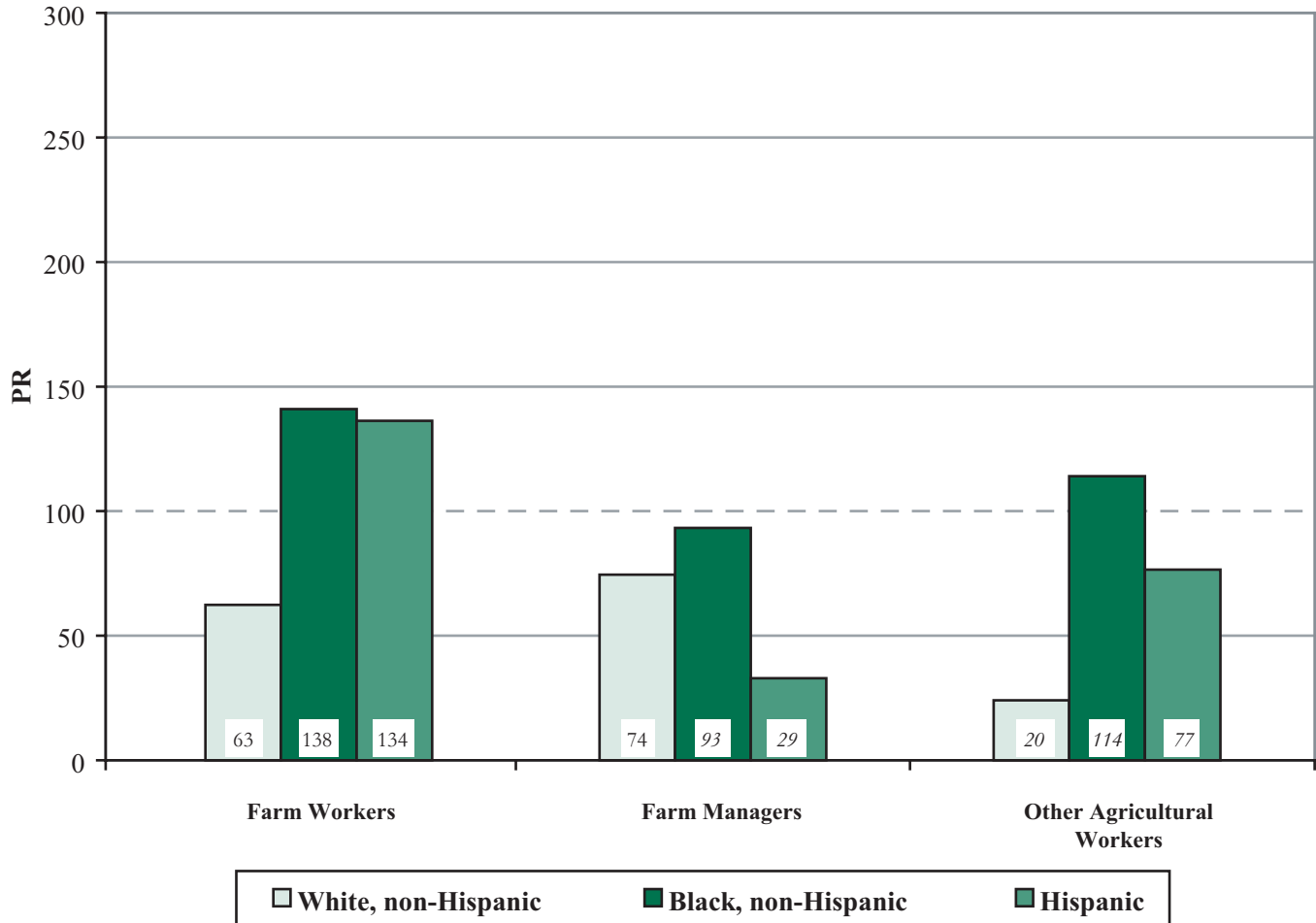


NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

*Morbidity by Agricultural Group and Race/Ethnicity within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III*

Figure 3-53. Spirometry, restrictive abnormality: Prevalence ratio (PR) adjusted for age and sex by agricultural group and race/ethnicity, U.S. residents age 17 and over, 1988–1994

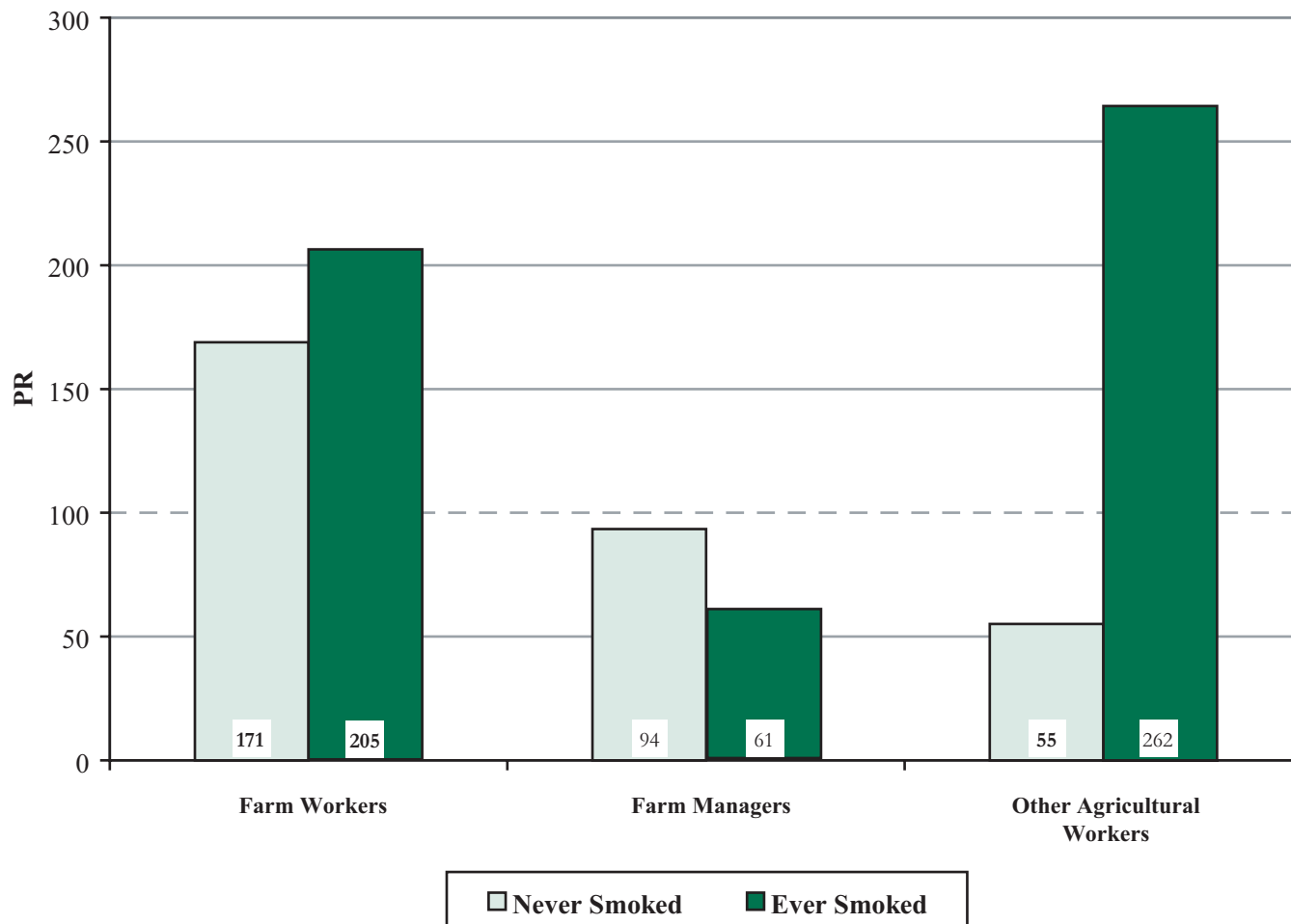


NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

***Morbidity by Agricultural Group and Smoking Status within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III***

Figure 3-54. Spirometry, obstructive abnormality: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by agricultural group and smoking status, U.S. residents age 17 and over, 1988–1994

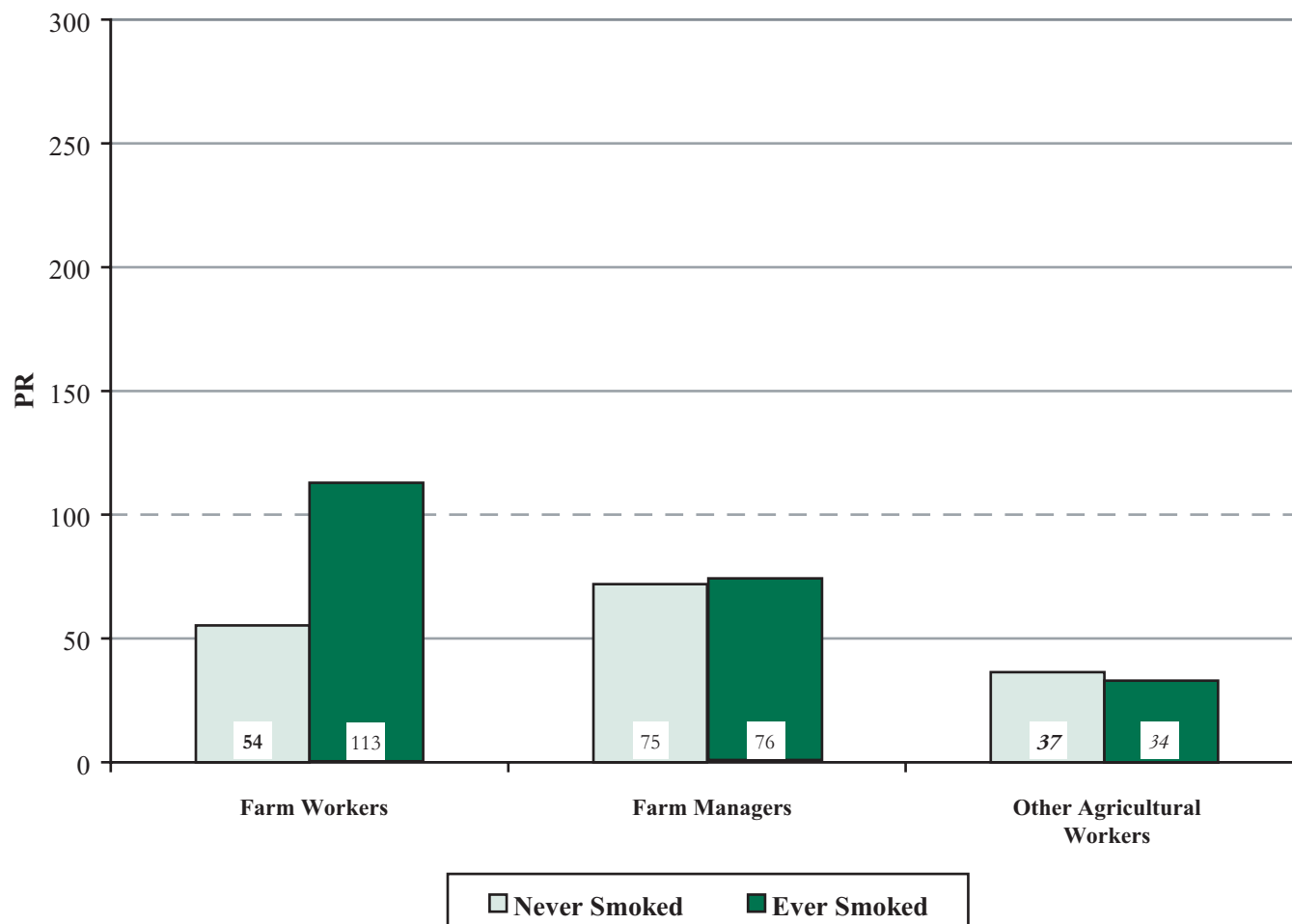


NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

*Morbidity by Agricultural Group and Smoking Status within Spirometry Index:
Obstructive and Restrictive Abnormality—NHANES III*

Figure 3-55. Spirometry, restrictive abnormality: Prevalence ratio (PR) adjusted for age, sex, and race/ethnicity by agricultural group and smoking status, U.S. residents age 17 and over, 1988–1994



NOTE: PRs in **bold** are significantly different from 100 ($p < 0.05$). PRs in *italics* are based on fewer than five observed cases. See appendices for source description and methods.

SOURCE: National Center for Health Statistics, Third National Health and Nutrition Examination Survey (NHANES III)

Table 3-23. Dust diseases of the lung: Estimated incidence per 10,000 workers by agricultural group, 1995–2001

Agricultural Group	1995	1996	1997	1998	1999	2000	2001
Agriculture/Forestry/Fishing*	0.1	0.1	0.3	0.2	0.2	0.2	0.1
Agricultural Production*	0.2	0.1	0.4	0.4	0.3	<0.05	0.2
Agricultural Production, Crops*	0.2	0.1	0.3	0.3	0.5	<0.05	0.2
Agricultural Production, Livestock*	0.2	0.1	0.7	0.9	<0.05	<0.05	0.3
Landscape/Horticultural Services	<0.05	<0.05	0.3	<0.05	0.1	<0.05	<0.05
Forestry	<0.05	<0.05	<0.05	<0.05	<0.05	10.2	<0.05
Fishing/Hunting/Trapping	<0.05	<0.05	7.8	<0.05	<0.05	<0.05	<0.05
All Private Industry*	0.3	0.4	0.3	0.2	0.2	0.2	0.1

*Excludes farms with less than 11 employees.

SOURCE: Bureau of Labor Statistics: Survey of Occupational Injuries and Illnesses

Table 3-24. Respiratory conditions due to toxic agents: Estimated incidence per 10,000 workers by agricultural group, 1995–2001

Agricultural Group	1995	1996	1997	1998	1999	2000	2001
Agriculture/Forestry/Fishing*	1.4	1.7	2.7	3.7	1.8	0.8	0.4
Agricultural Production*	1.8	1.9	3.0	4.4	1.6	1.2	0.9
Agricultural Production, Crops*	1.8	1.5	3.2	2.3	1.4	0.6	0.6
Agricultural Production, Livestock*	2.1	3.1	2.1	11.2	1.9	3.0	1.7
Landscape/Horticultural Services	0.5	<0.05	0.7	2.4	1.3	0.2	<0.05
Forestry	<0.05	<0.05	<0.05	<0.05	1.8	1.6	0.8
Fishing/Hunting/Trapping	3.3	7.4	15.7	5.4	<0.05	2.4	<0.05
All Private Industry*	3.0	2.6	2.4	2.0	1.8	1.6	1.6

*Excludes farms with less than 11 employees.

SOURCE: Bureau of Labor Statistics: Survey of Occupational Injuries and Illnesses

